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Final Report

Dade County Trauma Task Force: A Multi-System Comparative Analysis

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16. Abstract <p>The Dade County Trauma Task Force, under contract with NHTSA, was charged with the responsibility of conducting a comparative analysis of selected trauma systems across the U.S. Members were to formulate an action plan for Dade County by providing recommendations based on what was identified in the other communities as successful. A secondary benefit of this study is that other communities might utilize this document to assist with the development of their trauma system. The components of trauma systems were studied in seven communities throughout the U.S. While each had some of the desirable political, medical, financial, and prehospital elements of a fully functioning trauma system, none was perfect for Dade County to duplicate. Four major components were identified for trauma systems to be successful: (1) a management and organizational structure must be in place; (2) funding sources must be established for each level of operation; (3) support from the medical community is essential to assure the long-term success of a trauma system; and (4) an effective prehospital system must be in place to assure system access and quality patient care.</p>			
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1.1 SCOPE AND OBJECTIVES

SCOPE AND OBJECTIVES

The Dade County Trauma Network began operation on September 15, 1985, with seven verified trauma centers. Fifteen days later, on October 1, 1985, the Dade County Fire Department placed its newly acquired trauma transport helicopter into service, thus guaranteeing that a trauma victim would reach a trauma center within the "Golden Hour." In April 1986 one pediatric trauma referral center was added to the Network. Paramedics from five Fire-Rescue services uniformly triaged patients to trauma centers based on the American College of Surgeons' trauma criteria. Representatives of each discipline involved in trauma care met regularly to discuss system management issues and quality assurance.

By all outward appearances, Dade County had the beginnings of a successful "Trauma System."

By the first quarter of 1987, Dade County's trauma system had declined to the point where only one trauma center remained in service for the entire county and the system management and quality assurance functions were non-existent. The volume of trauma patients, based on the American College of Surgeons 19-category trauma triage criteria (see attachment #6.2), was overwhelming the resources of the one remaining trauma center. The triage criteria were modified, based on local experience, to a 6-category criteria (see attachment #6.3) which included only the most severely traumatized patients.

What had happened to cause Dade County's trauma system to fall from its apparent successful beginning to its present state of subsistence in just 18 months?

Attempts at self-diagnosis were unsuccessful. Consultation with trauma system "experts" proved unproductive, as they were

unfamiliar with some of the numerous and complex local/regional issues affecting the system. It became clear that in a very short period Dade County was experiencing the problems that may eventually affect other trauma systems around the country.

In an effort to strengthen its weakening trauma system, the Dade County Fire Department appealed to the United States Department of Transportation's EMS Division for assistance in discovering a method to overcome the significant obstacles facing its trauma system. The concept supported by Department of Transportation was to form a trauma task force comprised of local representatives of the various trauma disciplines to study trauma systems in other counties across the United States. Congressman William Lehman was able not only to acquire the grant dollars for this project, but has been responsible for over a half of million dollars being sent to Dade County from Washington, D.C. for the use in the Trauma Network.

The goal of this task force would be to discover methodologies of trauma system service delivery in these sites which could be successfully transferred to Dade County given the existing demographics, economics, political structure, and resources. In addition, knowledge would become available that could be used for the development of other trauma systems.

The Trauma Task Force was divided into four committees to compile information in four areas of trauma system operation; 1) trauma system management issues, 2) pre-hospital and air ambulance issues, 3) system evaluation and quality assurance issues, and 4) uncompensated care and tort claim liability issues. The committees used as a guide a standardized set of questions in an attempt to have a basis for comparison among the sites visited. Additional questions were generated by the committee members as they pursued areas of particular interest.

Site visits typically lasted two days. Schedules included meetings with EMS agency administrators, trauma center administrators and

physicians; nurses; non-trauma hospital administrators; quality assurance committee members; pre-hospital EMS providers, both public and private; EMS dispatchers; medical helicopter personnel; and others. Post site review meetings were held and the data collected were reviewed with comparative conclusions reached.

1.2 TASK FORCE MEMBERS

DADE COUNTY
TRAUMA TASK FORCE
MEMBERS

PROJECT DIRECTOR

Chief Carlos Perez

PROJECT COORDINATOR

Chief Tyler Smith

CLERICAL STAFF

Ms. Elsa Blanco
Ms. Renee Pfeffer

TRAUMA SYSTEMS ISSUES

Mr. Edward Donaldson
Gerardo Gomez, M.D.
Ms. Debra Johnston
Carl Keldie, M.D.
Frederick Keroff, M.D.
Thomas Natiello, Ph.D.

PRE-HOSPITAL CARE/AIR AMBULANCE

Lt. Daniel Cuoco
Mr. Robert Garner
Eugene Gitin, M.D.
Jeffrey Groom, R.N.
Chief Edward Jaremko

**SYSTEM EVALUATION AND QUALITY
ASSURANCE ISSUES**

Mr. Terry Davis
Jeanne Eckes, R.N.
Jeffrey Hammond, M.D.
Mr. Larry Jordan

**UNCOMPENSATED CARE, TORT CLAIM
LIABILITY, AND MALPRACTICE
INSURANCE ISSUES**

Mr. Charles Baumberger
Mr. Ricardo Forbes
Timothy Honderick, M.D.
Mr. Alan Petrine
Ms. Carol Rosasco
Malvin Weinberger, M.D.

1.3 CURRICULUM VITAE

Chief Carlos Perez -- Project Director

Chief Perez is currently the Division Chief of Special Services for the Dade County Fire Department. He has been in management at an executive level with the department since 1979 and most of his 20-year career has been devoted to EMS. He has an M.B.A. from the University of Miami. He was one of the first paramedics certified in the State of Florida and has developed several unique programs in EMS for the fire department, including the new Air Rescue unit which was placed in service on October 1, 1985.

Chief Tyler Smith -- Project Coordinator

Chief Smith is currently the EMS Division Chief for the Dade County Fire Department. He was promoted to Division Chief in 1983. He has an A.A. degree from Miami-Dade Community College and plans to receive his B.A. in Business from Florida International University. Chief Smith, a certified paramedic, was in charge of training for many years and created the Incident Command course now in use by the Metro-Dade Fire Department.

Ms. Elsa Blanco -- Project Secretary and Edit Clerk

Ms. Blanco has been with the Dade County Fire Department for five years. Previously she was employed by the County Manager's office and is the secretary for EMS.

Ms. Renee Pfeffer -- Project Secretary and Edit Clerk

Ms. Pfeffer has been with the Dade County Fire Department for the past six years. She was assigned to the Communications Division, the Air Rescue Division, and is currently secretary for the Special Services Division.

Mr. Edward Donaldson -- Metro-Dade Fire Chief, Retired

Mr. Donaldson retired from the Dade County Fire Department as Fire Chief in 1987. He was active in the development of the Dade County Trauma Network. He currently is a consultant to the Dade County Fire Department for State Legislative issues on trauma and is charged with the responsibility of assisting the County in drafting a Trauma Network Plan. Mr. Donaldson has a Bachelors of Education from the University of Miami and a Masters in Public Administration from Nova University.

Gerardo Gomez, M.D. -- Trauma Surgeon

Dr. Gomez is currently the Assistant Professor of Surgery at the University of Miami School of Medicine. He is the Medical Director for the Dade County Fire Department and Assistant Chief of Trauma Services at the University of Miami/Jackson Memorial Medical Center. Dr. Gomez was the Medical Director for the City of Miami Fire Department's rescue system and a member of the Medical Advisory Committee for the Dade County Trauma Network 1985-1987. He was also chairman of the Quality Assurance Sub-Committee for Dade County Trauma Network during 1985-1987.

Ms. Debra Johnston -- Vice President, South Miami Hospital

Ms. Johnston is currently the Vice President of South Miami Hospital, previously a Level II Trauma Center. She has a B.S. in Nursing Administration from East Carolina University in Greenville, North Carolina, and an M.S. in Rehabilitation Counseling.

Carl Keldie, M.D. -- Emergency Physician

Dr. Keldie is the Director of Emergency Medicine at Hialeah Hospital, previously a Level II Trauma Center. He was Co-Director of the Hialeah Fire Rescue system between 1985-1986.

Frederick Keroff, M.D. -- Emergency Physician, FACEP

Dr. Keroff is the Director of Emergency Services at Palmetto General Hospital in Hialeah, Florida. He is Board Certified in both Family Medicine and Emergency Medicine. Currently, he is Chairman of the American Heart Association ECC-CPR committee, Dade County Chapter. He is a Florida State Affiliate Faculty member for ACLS and is a member of the State Affiliate ECC-CPR Council. He has been a member of the Medical Advisory Committee for Dade County Trauma Network since 1986. He is a clinical Associate Professor at the University of Miami Medical School.

Thomas Natiello, Ph.D. -- Professor, University of Miami

Dr. Natiello is the founder of the Graduate Health Administration Program; and is currently the Director of the Institute for Health Administration and Research at the University of Miami. He is Professor of Business Administration and is a consultant to public, private, governmental groups, and organizations in the field of health-related issues. Dr. Natiello received his Ph.D. from Michigan State University in Management and Economics in 1966. He is also the founder of the National Health Administration Division of the Academy of Management.

Lt. Daniel Cuoco -- Air Rescue Flight Medic

Lieutenant Cuoco is assigned as the standardization and training officer for the Air Rescue Division of the Dade County Fire Department. He has ten years experience as a firefighter and paramedic with the Dade County Fire Department. Lt. Cuoco also has eight years' experience as a United States Air Force Para-rescue Specialist. He holds an A.S. degree in Fire Science Technology from Miami-Dade Community College. Lt. Cuoco is S.W.A.T. certified with the City of Miami Police Department, an ACLS instructor, a Fire Service Instructor, and a Florida State Firefighter, Smoke-diver trained.

Mr. Robert Garner -- Vice President of Randle-Eastern

Mr. Garner is Vice President of Randle-Eastern Ambulance, one of the largest private ambulance companies in the United States. Mr. Garner received his B.A. from the University of North Carolina in 1968. He has served as Chairman of the State of Florida's Emergency Medical Services Advisory Council since 1986, and has been Chairman of the Miami-Dade Community College EMS Advisory Committee from 1982 to the present. Mr. Garner served as a course coordinator for Miami-Dade Community College and holds his EMT and Paramedic Certificates.

Eugene Gitin, M.D. -- Emergency Physician

Dr. Gitin is the Director of the Emergency Department at Parkway Regional Medical Center and is Assistant Medical Director for the Dade County Fire Department. He is a Diplomate of the American Board of Internal Medicine and is Board certified in Emergency Medicine. Dr. Gitin received his B.A. from Hobart College, Geneva, New York, and his M.D. from Downstate Medical Center, State University of New York, graduating Summa Cum Laude.

Mr. Jeffrey Groom, R.N. -- REMT-P

Mr. Groom is employed by the EMS Division of the City of Miami Fire Department and is responsible for the training of all paramedics within this department. He has a B.S. in Health Care Science and a M.S. in Management Information Systems. Mr. Groom is currently working towards a Ph.D. in Public Administration and Organizational Development.

Chief Edward Jaremko -- Division Chief

Chief Edward Jaremko has been with the City of Miami Fire Department for 34 years. He was appointed Chief of the Rescue Division in February 1981. He has been instrumental in providing direction for the Emergency Medical Rescue services since that time. He has served on numerous committees, represented the Dade County Chief Fire Officers Association and with the University of Miami/JMH School of Medicine.

Mr. Terry Davis -- State EMS Program Supervisor

Mr. Davis is employed by the State of Florida EMS Office in Tallahassee, Florida. He is responsible for Trauma Center Verification and is presently drafting the Rules and Regulations for implementation of the 1987 Florida Trauma Care Act.

Ms. Jeanne Eckes, R.N. -- Trauma Coordinator

Ms. Eckes is the Trauma Coordinator of the University of Miami/Jackson Memorial Medical Center, Level I Trauma Center in Dade County. Prior to this position, Ms. Eckes was the Associate Head Nurse in the Surgical Intensive Care Unit at the University of Miami/Jackson Memorial Medical Center for four years. Ms. Eckes holds a Diploma from the Jackson Memorial Hospital School of Nursing, and an A.S. and A.A. degrees from Miami-Dade Community College. She is presently a candidate for a B.S. in Health Care Administration. She was a member of the trauma registry committee of the Dade County Trauma Network.

Jeffrey Hammond, M.D. -- Trauma Surgeon

Dr. Hammond is the Assistant Professor of Surgery and Co-Director of the Burn Center at the University of Miami/Jackson Memorial Medical Center, the Level I Trauma Center in Dade County.

Mr. Larry Jordan -- State EMS Director

Mr. Jordan is the Director of the EMS Office for the State of Florida, Department of Health and Rehabilitative Services. He is also President of the National Association of State EMS Directors.

Mr. Charles Baumberger, J.D.

Mr. Baumberger is in private practice as a partner in the law firm of Rossman, Baumberger, and Peltz, P.A. in Miami, Florida. He is a member of the Board of Directors for the Academy of Florida Trial Lawyers, a Founding Board Member and a current member of the Board of Directors of the Dade County Trial Lawyers Association. He is also a Member of the Executive Council of the Florida Bar. Mr. Baumberger received his law degree from the University of Florida and a B.A. from Vanderbilt University in 1963.

Mr. Ricardo Forbes -- Administrator

Mr. Forbes is the Administrator of the Emergency Care Center of the University of Miami/Jackson Memorial Medical Center. He received his Masters of Public Health Administration from New York University in 1977 and has a B.A. in Political Science from Queens College in New York. Mr. Forbes has qualifications as an Administrator of a medical school affiliated hospital, Assistant Administrator and Operating Officer of Patient Services and currently is the Administrator of the fifth busiest emergency care center in the nation.

Timothy Honderick, M.D. -- Emergency Physician

Dr. Honderick completed his training at the University of Miami and immediately assumed a faculty role at that institution. He is presently a clinical instructor at the University of Miami School of Medicine. He was initially certified in Family Practice and has since received his Boards in Emergency Medicine and Quality Assurance and Utilization Review. Dr. Honderick presently functions as Medical Director of several Emergency Departments in an EMS system in South Florida. In addition, he coordinated the initial trauma studies in Broward County, Florida.

Mr. Alan Petrine, J.D.

Mr. Petrine is a graduate of the University of Miami Law School. He is an Associate with the firm of Colson, Hicks and Eidson, P.A. Mr. Petrine attended Swarthmore College and received his B.A. in History. He was admitted to the Bar in 1984.

Ms. Carol Rosasco -- Vice President, Mount Sinai Medical Center

Ms. Rosasco is Vice President of Mount Sinai Medical Center in Miami Beach, Florida. Mount Sinai was previously a Level II Trauma Center. She obtained her B.S. degree from St. Francis College and her Masters in Public Administration from New York University. Prior to joining Mt. Sinai Medical Center, Ms. Rosasco was Vice President at North Miami General Hospital and Associate Director of The Brooklyn Hospital-Caledonian Hospital.

Malvin Weinberger, M.D. -- Pediatric Surgeon

Dr. Weinberger is a Senior Attending Surgeon at Miami Children's Hospital and currently president of its medical staff. He is Assistant Professor of Surgery and Pediatrics at the University of Miami School of Medicine and consults with Mount Sinai Hospital on Pediatric matters. Dr. Weinberger received his M.D. from Temple University School of Medicine in Philadelphia, Pa. He is Board Certified by the American Board of Surgery, and received his Certificate of Competence in Pediatric Surgery.

2.0 EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Dade County Trauma Task Force was charged with the responsibility of conducting a comparative analysis of selected trauma systems across the United States. Members were to formulate an action plan for Dade County by providing recommendations based on what was identified in the other communities as successful. A secondary benefit of this study is that other communities might utilize this document to assist with the development of their trauma system. The components of trauma systems were studied in seven communities throughout the United States. While each had some of the desirable political, medical, financial, and pre-hospital elements of a fully functioning trauma system, none was perfect for Dade County to duplicate.

When one reflects on the knowledge gained from the experience of developing a trauma system concept and compares the findings with experiences of other communities, four major components must be taken into account. 1) A management and organizational structure must be in place for any system to function efficiently. 2) Funding sources must be established for each level of operation. 3) Support from the medical community is essential to assure the long-term success of the trauma system. 4) An effective pre-hospital system must be in place to assure system access and quality patient care.

MANAGEMENT/ORGANIZATIONAL STRUCTURE

Any community that studies and develops a trauma system must put in place a well-developed managerial and organizational structure for support, balance, and leadership. How that system's organizational structure is formed will vary from location to location. Some communities have strong individual leaders, such as R Adams Cowley, M.D., in Maryland, that guide the necessary issues

to implementation. Others use traditional agencies such as local health departments, EMS offices, volunteer committees and governmental units that have the authority and ability to organize.

It is essential that a clearly identifiable management and organizational structure be in place first, in order to secure funding, garner support from the medical community, and develop the pre-hospital care system.

FUNDING

The success of any trauma system is dependent on having adequate funding for both the operation of the trauma centers and for overall management of the trauma system.

In a trauma center, the need for adequate funding goes beyond the hard dollars for the facility, equipment or the cost of salaries. The resources needed to properly care for the trauma patient can adversely impact many cost centers within the facility by interrupting operating room schedules and diverting personnel resources.

Successful operation of a trauma "system" also requires funding for system management. Some person or agency must assume the responsibility for overall system management functions such as quality assessment, trauma center designation, trauma registry, medical standards, triage criteria, and patient transfer policies.

It becomes imperative for the organizational and management structures of the trauma system to work with the medical community, medical facilities, and the local political jurisdictions to find solutions to these funding issues and to identify potential areas of conflict before they occur.

MEDICAL SUPPORT

Trauma must be recognized as a specialty. Trauma is a disease that requires the support of a number of health care disciplines to reduce unnecessary death and disability in a community. The medical staff must understand the enormous commitment which is required. An increase in patient volume may disrupt routine functioning or schedules of both medical staff and the facility. Physician concerns of greater malpractice risk and higher overhead must be recognized. However, physicians must understand the experience and rewards that were demonstrated to be available in other systems.

There was little doubt that two major factors created a different environment for physicians when compared to our community. First, State laws varied but most provided greater financial support. Physicians reported that some states' laws provided greater liability protection than those in Florida. Second, the obvious "esprit de corps" maintained by the medical staffs was evident and a very important part of the trauma team.

PRE-HOSPITAL CARE

Communities employed a variety of methods to provide good pre-hospital care. Well-functioning systems included private, private/public and volunteer programs. There was no consistent standard for paramedics and pre-hospital care, identified in some communities such as Richmond, Virginia, and Salt Lake City, Utah. Nearby communities, similar to Chesterfield, Virginia, and Orem/Provo, Utah, were providing varying degrees of pre-hospital care and the service levels depended on the political jurisdiction.

Important factors to well-functioning pre-hospital systems were the level of paramedic training and quality control programs. It is critical that the local community develop a well staffed, professional, and trained paramedic force. These pre-hospital

personnel must be involved in initial planning stages and integrated into later decision-making mechanisms.

SITE VISITS

The Trauma Task Force studied trauma systems in seven communities across the United States. A comprehensive analysis of each site visit is included later in this report, however a short overview is provided here.

Jacksonville, Florida

Jacksonville had strong medical leadership in the pre-hospital care area with two Fire-Rescue Medical Directors dedicating much of their time to overseeing the operation of the pre-hospital care system. In addition, the University Hospital demonstrated a strong commitment to trauma care. Although individual components of trauma care in Jacksonville appeared to be viable and well managed, there was an absence of many of the basic elements of trauma systems management that had been visible in the other sites visited. For example, Jacksonville did not have a trauma registry, they provided no evidence of system quality assessment efforts, and adherence to standardized patient transport criteria was not required.

Baltimore, Maryland

The Maryland system is a unique operation that would not have been possible without the efforts of Dr. R Adams Cowley who was able to obtain the funding and support for this program. Shock Trauma is a showcase, but many questions were raised as to whether duplicating their organization is feasible or financially possible. There was a mix of public and private providers which comprised the Maryland Trauma System. Strong medical control was evident and all surgeons appeared to have extensive experience. Legislative support at the State level is essential for their continued success.

Richmond, Virginia

This site had strong leadership at the State level. At local levels the leadership was not as strong. The community was served medically from a university setting, which was able to absorb much of the cost in setting up the trauma system. The use of volunteers in the community was unique, but the task force was concerned about the effectiveness of the pre-hospital care system in the more populated areas where response time to the scene and travel time to the hospital are critical.

San Diego, California

San Diego demonstrated a highly organized and well-functioning system. Leadership was directed from the health department through a well-staffed and professional group of personnel. There was a great amount of support for the pre-hospital care system and the use of private providers in the City of San Diego was excellent.

Orange County, California

The Orange County, California, system has been in operation since 1981 and many elements of this system serve as models for the final recommendations for Dade County. Pre-hospital and hospital components of the Orange County system are fully integrated and participate in all aspects of system planning and control. Quality control is accomplished system wide and a strong commitment to constructive critique mechanisms allows pre-hospital providers to have direct input from medical staff. It is evident that this system has matured, although frequent and productive meetings of various advisory committees allow adjustment and refinement as required.

PRE-HOSPITAL CARE/AIR AMBULANCE ISSUES

- BTLS must be included for paramedic re-certification.
- Pre-hospital training must be in a college/university setting.
- Certification must be based on performance for all paramedics.
- Priority dispatching system should be implemented.
- 9-1-1 centers should establish area-wide communications.
- 800 Mhz trunking be evaluated to maximize communications.
- Pre-hospital providers must be a part of the planning process.
- Transportation needs must be carefully evaluated.

SYSTEMS EVALUATION AND QUALITY ASSURANCE ISSUES

- Q.A. programs must be a component of the trauma system.
- Q.A. programs must have a comprehensive trauma registry.
- A committee should be directed to establish Q.A. needs.
- Site reviews must be performed by a multi-disciplinary team.
- Q.A. programs must be protected from discovery.
- Public Education must be a vital component of trauma systems.

UNCOMPENSATED CARE, TORT CLAIM LIABILITY, AND MALPRACTICE INSURANCE ISSUES

- Dade County must pursue state funding for uncompensated care
- Florida should create a Medicaid waiver for trauma patients
- The Government must provide funding for its alien population.
- Florida must enforce mandatory auto insurance laws.
- Florida must have affordable professional liability insurance.

Salt Lake City, Utah

Salt Lake City was the only metropolitan area in a trauma system that extended for hundreds of square miles. The medical community readily accepted patients from outside their catchment area, and even outside of their state. The indigent population was small and therefore not a factor in hospital management decisions. Orem and Provo expressed an unwillingness to participate in the trauma system since they felt their local community hospitals were providing good care. In rare cases they transported patients to Salt Lake City.

RECOMMENDATIONS

The first major step that must occur in Dade County is the immediate implementation of a Local Trauma Advisory Committee and creation of a Local Trauma Agency. Since the Dade County Trauma Task Force members have been educated during the last year as to the various systems throughout the United States, and since a majority of the medical community is represented, the recommendation is that this task force be the core of the initial Local Trauma Advisory Committee. The Local Trauma Agency will receive its direction from this Advisory Committee. Approximately one-half of the cost to create this new structure is currently being funded by the Fire Department. The United States Department of Transportation and the State of Florida EMS Office have indicated that funding sources are available which will financially support additional staff and overhead for the next several years.

The Task Force was divided into four major groups with the responsibility for review and analysis of a specific component of the trauma system. Each group developed recommendations for their particular area of study. Main recommendations, as applicable to the responsibilities of the Trauma Advisory Committee, are as follows:

TRAUMA SYSTEMS ISSUES

- Leadership must be created in the Dade County Trauma System.
- Designation of trauma centers must be a local option.
- State Legislation must be more sensitive to local issues.
- Increased medical control should be developed.
- Funding must be addressed at both legislative levels.
- Triage criteria must be developed using data collected.

3.0 MAIN OBSERVATION, CONCLUSION AND RECOMMENDATION

M A I N R E C O M M E N D A T I O N

LOCAL TRAUMA ADVISORY COMMITTEE **AND** **LOCAL TRAUMA AGENCY**

OBSERVATION

Operationally successful trauma systems are based upon state-wide trauma system legislation which defines standards, structures, and authorities for the implementation of trauma systems at each level of government, from local, through regional, to the state. Keys for successful implementation depend upon the participation and cooperation of pre-hospital and hospital providers, government, and citizens interested in improved trauma care. Several sites visited were representative of this cooperative effort.

In Maryland, the responsibility for implementing a state-wide EMS/trauma system was vested in the Maryland Institute for Emergency Medical Services System (MIEMSS) by Executive Order and State law. An advisory committee, the Maryland Trauma Center Network ("Network"), was formed to advise the Director of MIEMSS on policy. Membership includes the Chief Executive Officers (CEO) of the Trauma Centers, the Directors of Trauma Services, and the Trauma Coordinators from the eleven trauma centers participating in the program. Affiliate members include the five regional medical directors, the MIEMSS regional administrators, the Director of MIEMSS, the CEO of each specialty referral center and the Chairperson of the Regional EMS Advisory Council. Policies recommended by the Network are implemented by means of standards and guidelines issued state wide by the Director of MIEMSS.

In Utah, the Emergency Medical Services System Act of 1981 formed a State Emergency Medical Services Committee which has broad powers and responsibilities in establishing state wide policy. The Bureau of EMS of the Utah Health Department is responsible for implementing policy and enforcing rules developed by the committee. Local involvement in the State process is via subcommittees. In Salt Lake, for example, the Salt Lake Valley District EMS Committee serves as a subcommittee to the State EMS Committee. This subcommittee on state-wide policy has the authority to approve or disapprove local patient protocols.

Similarly, the State of Virginia has created a well structured trauma network. The State has delegated authority to four regional advisory councils. This provides a mechanism for the evaluation of regionalization with the involvement of participants in effective coordination.

The State of California vests considerable authority in implementing trauma systems at the regional and county level. The San Diego County Board of Supervisors, similar to the Dade County Board of County Commissioners, implemented the trauma system. The Department of Health Services was designated as the local EMS agency responsible for: recommending policy consistent with Federal and State standards; identifying hospitals to be designated as trauma facilities; implementing a coordinated system of pre-hospital and hospital care; and enforcing rules adopted by the Board of Supervisors.

The Board of Supervisors, in turn, entered into contractual agreements with the hospital facilities to provide trauma services. While the EMS Division of the Health Department has considerable authority to implement policy and rules, it relies heavily on the input of advisory committees, including the president of the Medical Society and physician representatives from all hospitals.

Florida has a newly enacted Trauma Care Act (see attachment #6.1) but no identified "Network or Trauma Care System." One purpose of this report is to provide guidance to Florida and Dade County on system development.

CONCLUSION

Establishment of effective systems for trauma care begins with trauma legislation which defines structure and responsibilities for implementation of the program at each level of government.

Effective trauma systems ensure that all components of the trauma system, including pre-hospital, trauma hospitals, non-trauma hospitals, consumers, and responsible EMS agencies have a voice in policy development.

There is no single organizational relationship between counties, regions, and the state which encourages trauma system development. Effective systems can be established at the county level, and then linked to other counties and regional systems to provide a comprehensive state-wide network. The State has the authority to create a structure in the event counties fail to provide their citizens with proper trauma care.

RECOMMENDATION

The Dade County Commission should take a strong leadership role for improving the current Trauma System by:

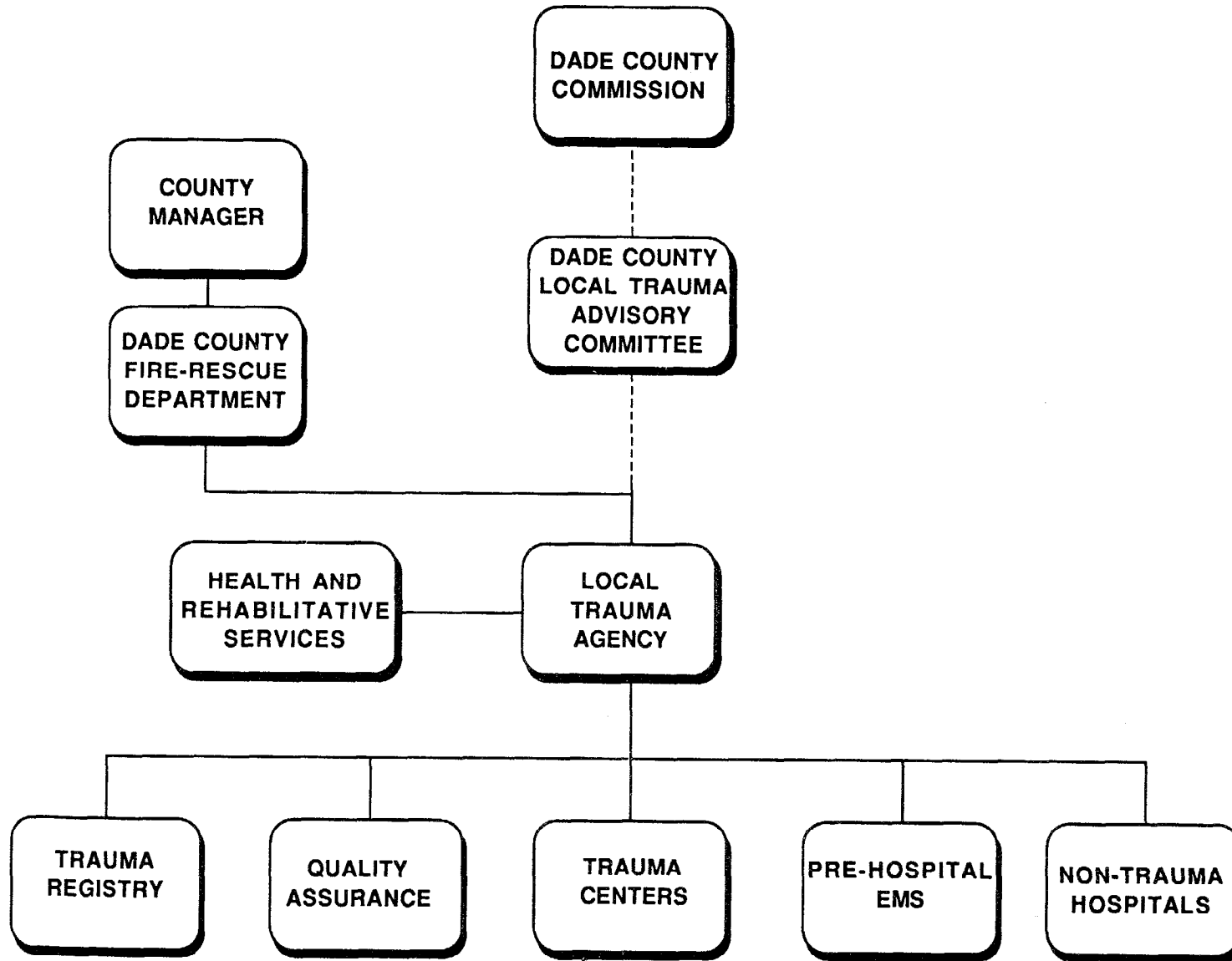
1. Establishing a Local Trauma Agency as provided for by the State of Florida Trauma Care Act ,and;
2. Creating a Local Trauma Advisory Committee which shall consist of the Dade County Trauma Task Force members with additional representation from the following areas:
 - Citizen Groups
 - Dade Citizens' Safety Council
 - Department of Public Health
 - Health Rehabilitative Services
 - Fire Department Medical Directors

The Local Trauma Advisory Committee shall serve as focal point for discussion of trauma care and report directly to the County Commission. This Trauma Committee shall have the authority to appoint appropriate subcommittees. It shall recommend policy guidelines for dealing with such issues as:

- developing policy recommendations for the Local Trauma Agency.
- proposing State legislation which will ensure that all trauma patients receive care at the appropriate trauma center.
- evaluating the availability and quality of trauma care services in the County.

- proposing trauma care legislative issues to the Dade County Commission and the Local Trauma Agency.
- recommending standards for the training of pre-hospital trauma care providers.
- coordinating the development and operation of county-wide EMS communication systems.
- developing public education programs to inform the public of the availability and use of the trauma care system.
- developing and promoting trauma prevention programs.
- recommending standards for trauma patient transfer protocols.
- expanding into an EMS Regional Council to address and make recommendations on the wider issues involved in the delivery of the range of Emergency Medical Services in Dade County.

Trauma System Chart



Trauma System Chart (Functional Relationships)

The purpose of the **Trauma System Chart** is to identify the functional relationships of each major area with respect to the authority delegated by the State of Florida Trauma Care Act. It does not dictate reporting lines of authority.

The Dade County Fire Department is in a position to perform in a leadership role, obtain Federal Grants, and establish a funding mechanism for day-to-day operations and future expansion. The proposed structure will operate under the indirect supervision of the Dade County Fire Chief.

DADE COUNTY LOCAL TRAUMA ADVISORY COMMITTEE

As stated in the Main Recommendation, the Dade County Local Trauma Advisory Committee shall be formed from the core members of the Dade County Trauma Task Force. These individuals have been exposed to a number of issues and systems during the past year, and therefore have the knowledge to guide the development of EMS/Trauma care in Dade County. With the addition of several other key interest groups, the Local Trauma Advisory Committee will be able to direct the Local Trauma Agency in establishing new guidelines for EMS.

LOCAL TRAUMA AGENCY

The purpose of this office is to carry out the provisions of the Trauma Care Act. It will be staffed by an Administrator who is employed by the Dade County Fire Department and reports indirectly

to the Fire Chief. The Administrator shall work closely with the Local Trauma Advisory Committee and the medical community.

**4.0 OBSERVATIONS
CONCLUSIONS
RECOMMENDATIONS**

4.0 OBSERVATIONS, CONCLUSIONS, RECOMMENDATIONS

In this section we will present the observations, conclusions, and recommendations by group:

- Trauma System Issues
- Pre-hospital/Air Ambulance Issues
- System Evaluation and Quality Assurance Issues
- Uncompensated Care, Tort Claim Liability, and Malpractice Insurance Issues

These observations, conclusions, and recommendations were extrapolated from the site visit reports which are presented later in this report.

There was one key issue which all groups observed and strongly recommended: **The existence of a regional agency or advisory committee to take the leadership role.** It was evident from the site visits that for an effective trauma system to be developed, an individual or an agency must assume an aggressive leadership role.

4.1 TRAUMA SYSTEM ISSUES

LEGISLATION

OBSERVATIONS

Operationally successful trauma systems are based upon state-wide trauma system legislation.

State authority existed in each system with varying degrees of interaction at the local level. Where the state or its delegated agency actively participated in the development and/or assessment process, such as California and Maryland, the system tended to have a much better defined trauma service delivery mechanism.

The existence of clearly defined state-wide legislation and local EMS emergency regulations allowed hospitals, physicians, and other involved groups to understand the standards and regulations that require compliance.

Regulatory authority was found to rest at the State level at the following sites: Baltimore, Maryland; Richmond, Virginia; Salt Lake City, Utah. In San Diego, California, and Orange County, California, regulatory authority was delegated by the State to local agencies who have considerable autonomy using State established guidelines.

CONCLUSIONS

Effective legislation is needed to define the medical care responsibilities.

Each trauma system network needs to have a clear definition of hospital responsibility and a clearly identified decision-making process.

The state should provide oversight to the local or regional trauma system. Effective legislative efforts at the local level with strong physician and hospital participation will improve patient care.

RECOMMENDATIONS

State legislation should clearly spell out state and local authority, designation criteria, triage guidelines and requirements for system planning. A state EMS agency should function in a coordinating role.

States should enact legislation requiring trauma system planning on a regional basis with implementation subject to state approval. The Florida trauma legislation currently provides for:

1. The organizational structure of the trauma system.
2. Pre-hospital care management guidelines for triage and transportation of trauma cases.
3. Flow patterns of trauma cases and transportation system design and resources, including air transportation services, and provision for interfacility transfer.
4. The number and type of major trauma cases necessary to assure that trauma centers will provide quality care to trauma cases referred to them.
5. The resources and equipment needed by trauma facilities to treat trauma cases.
6. The availability and qualifications of the health care personnel, including physicians and surgeons, who

comprise the trauma teams that treat major trauma cases within a trauma facility.

7. Data collection regarding system operation and patient outcome.
8. Periodic performance evaluation of the trauma system and its components.
9. The utilization of air transport services within the jurisdiction of the local trauma agency.
10. Public information and education about the trauma system.
11. Emergency medical services communication system usage and dispatching.
12. The coordination and integration between the verified trauma care facility and the nonverified health care facilities.
13. Medical control and accountability.
14. Quality control and system evaluation.

Regional systems should be developed by local agencies which would allow flexibility to assess individual regional needs. Regional decisions should be subject to State approval. In keeping with this and with current State law, we recommend that verification of trauma centers be performed by the local or regional trauma agency.

State standards should consider the American College of Surgeon's guidelines (ACS) and the American College of Emergency Physicians (ACEP) guidelines. Regional flexibility, with special consideration being given to areas with limited resources, is necessary.

Consistent with State law, the American College of Surgeons' (ACS) "Hospital and Pre-hospital Resources for Optimal Care for the Injured Patient" shall be used as a guide to verify trauma facilities.

STATE AUTHORITY

OBSERVATIONS

State authority existed in each system with varying degrees of interaction at the local level. Where the state or its delegated agency actively participated in the development or assessment process, the system tended to have a much better defined trauma service delivery mechanism. All systems needed advisory committees to resolve system and policy issues. More effective legislative efforts resulted from a local commitment typically motivated by strong physician leadership rooted in a concern for excellent patient care.

CONCLUSIONS

Broad goals should be set by state agencies and more specific standards established and enforced at the regional level. Both private and public providers appear to be able to fulfill community needs.

RECOMMENDATIONS

Dade County should establish a Local Trauma Agency under the authority delegated to them by the State of Florida Trauma Care Act. (See attachment #6.1).

The State has the authority to establish trauma regions in those geographical areas where there are no State-approved local or regional trauma system agencies and plans and where the State determines there is need for organized trauma services for the residents of the geographical area.

LEADERSHIP

OBSERVATION

Leadership functions may be fulfilled in many ways, e.g., by an individual, a medical school group or a trauma department, a system agency, or a group of concerned citizens or elected representatives. In the Maryland system, one physician, R Adams Cowley, M.D., was the leader in developing the system that is in place today. In San Diego, leadership for the system is provided by the EMS office located in the County Department of Health.

CONCLUSION

Leadership functions are an important factor in successful trauma system development and maintenance.

RECOMMENDATION

Leadership, particularly in developmental phases, must be provided by a group that has knowledge of community medical needs, political acumen, and a commitment to long-term efforts. In Dade County, this leadership should be provided by the Trauma Advisory Committee working closely with the Local Trauma Agency.

M A N A G E M E N T

OBSERVATIONS

There were varying degrees of management systems in place at each of the sites visited. Maryland and San Diego appeared to have the strongest management structures. Some communities such as Richmond, Virginia, and Jacksonville, Florida, were managed with weak structures and in some cases used informal and ad hoc committees to develop management strategies.

Older systems tended to adhere to long established pre-hospital triage criteria to transport patients to the most appropriate facility. Recently established systems conducted assessment studies based on regional needs, geography, demographics, and patient volume to determine appropriate facility criteria.

The number of trauma centers in individual regions varied based on system design and maturity.

CONCLUSIONS

In mature systems the number of trauma centers reflect the available resources and identified needs. The number of trauma centers and physician providers varied widely and reflected community resources.

Providers of trauma care should anticipate an increase in the volume of serious victims.

Mature systems have advisory committees that effectively resolve system and policy issues.

RECOMMENDATIONS

Dade County should undertake the development of a trauma system through the formation of a local trauma agency with guidance provided by a trauma advisory committee (see pages 41-48).

Trauma services provided by verified trauma centers should be done so under contract with the County.

TRAUMA DESIGNATION

OBSERVATIONS

In all sites the hospitals either contributed or paid a fee at the time of proposal to fund the regional development of the trauma system.

The criteria for designation followed American College of Surgeons (ACS) guidelines with some local modifications.

A re-designation process existed in each system. While implementation varied in frequency and application, each system reserved the right to conduct site visits at the discretion of the regulatory agency.

CONCLUSIONS

Designation plays a critical role in determining the status and scope of the trauma system.

Periodic site visits to address the compliance with minimum established criteria were conducted at the discretion of the regulatory agency.

RECOMMENDATIONS

Verification of trauma facilities and contracts for trauma services with these facilities shall be performed by the Local Trauma Agency. Re-verification of trauma facilities should be mandatory and conducted every two years.

The State should retain the authority to conduct an independent survey to insure compliance with State standards.

The Trauma Advisory Committee should study the legislation recently passed by the Florida Special Session on Medical Malpractice, and signed into law by Governor Martinez with respect to verification of trauma centers.

M E D I C A L D I R E C T I O N

OBSERVATION

Responsibility for day-to-day system management resided with the individual center except for one system, Maryland, where a state director was involved on an as-needed basis in patient triage. Each center had either a salaried physician director (Level I) or a designated physician director with overall management responsibility.

CONCLUSION

An essential element of any trauma system is strong medical management.

RECOMMENDATION

Each trauma facility in Dade County should have a medical director whose role is fully integrated into the hospital administration decision-making process, and has authority for day-to-day trauma care decisions.

FUNDING

OBSERVATION

The sites visited provided a variety of mechanisms for funding emergency medical services and trauma care, such as: State tax revenues, local tax revenues, levies on motor vehicle registrations, and participation fees.

CONCLUSION

Trauma systems, like EMS systems in general, need consistent and dependable sources of funding to operate.

RECOMMENDATIONS

Funding is a critical issue in a trauma system and must be addressed at the inception with commitment from all participants to accept the fiscal outcome for a certain period of time.

A mechanism should be put into place to regularly review funding with a commitment to seek effective relief to meet the identified needs.

The trauma system management structure outlined on pages 41-48, insures current and future financial viability of this program.

H O S P I T A L T R A N S F E R S

OBSERVATION

Each system has developed transfer policies which vary from informal practice to very detailed protocols.

CONCLUSION

An important element of good patient care is the ability to transfer patients to the appropriate facility. A trauma system should identify its resources and establish a clear method of inter-facility transfers.

RECOMMENDATION

The Dade County Local Trauma Advisory Committee should establish the protocols for inter-hospital transfer.

TRAUMA CENTER SUPPORT

OBSERVATION

Some trauma centers such as University Hospital of Jacksonville indicated that they were able to build a new trauma unit with separate capital funds earmarked for trauma specifically.

CONCLUSION

It is important that trauma centers receive the financial and organizational support which would allow their department to function in an environment free from other hospital functions. Funds allocated for trauma should be earmarked for that specific purpose.

RECOMMENDATION

Trauma is a severe and complex public health disease which requires public attention and support. It is recommended that the Dade County Commission support trauma care at the University of Miami/Jackson Memorial Trauma Center by:

- developing a mechanism for the long term financial stability for trauma care.
- by creating a trust fund at UM/Jackson Memorial Medical Center for education and research on trauma care.

4.2 PRE-HOSPITAL CARE/ AIR AMBULANCE ISSUES

AUTHORITY

OBSERVATIONS

Authority for the pre-hospital system varied from a fully structured organizational flow from state office to provider, such as in Virginia, to locally structured systems, such as in Orange County. In all cases, the statutory authority emanated directly from state law. In California, this state authority is delegated to regional or local EMS organizations.

Significant changes in the degree of integration of the pre-hospital component into the trauma system have occurred with the inception of the trauma system. The most efficient systems seem to have the greatest degree of integration of the pre-hospital component into the trauma system itself. This was frequently a source of pride on the part of the pre-hospital providers. In addition, it served as an excellent method for quality assurance activities and for continuing medical education. Medical standards were found to exist in all systems for triage decisions, treatment protocols, and transportation regulations. In the most efficient trauma systems, the pre-hospital provider network was heavily involved in any decision making, systems planning, or implementation decisions. This involvement added an extra dimension to the quality of such decisions.

CONCLUSIONS

Authority for the pre-hospital system may vary from a direct state, regional, and local organizational structure to a more locally controlled system. In all cases, the basis for organization should be state law. Standards and general goals should be developed on a system-wide level with close attention to urban and rural

requirements. Ideally, the greater the integration of the pre-hospital system into the trauma system as a whole, the better the system will function. On-going review and re-evaluation is needed.

There should be strong, system-wide standards for triage, treatment, and transportation. Communication with all participants is critical for the development and implementation of such standards.

The pre-hospital system should be an integral part of all decision making, systems planning, and implementation of the trauma system.

RECOMMENDATIONS

The authority for the pre-hospital system should be clearly established with close attention to urban and rural requirements.

The basis for any system organization or authority should come from state statute.

The pre-hospital system should be fully integrated into the Trauma System through appropriate committee or advisory council structures. This system must include mechanisms for on-going review and evaluation.

System-wide standards for triage, treatment, and transportation should be developed with coordination for this activity being an advisory committee with representation from all system participants.

The pre-hospital system should be directly involved in all decision-making, systems planning, and implementation for the trauma system.

T R A I N I N G

OBSERVATION

State and county agencies, rescue services, vocational schools, private schools, and collegiate organizations provide pre-hospital training. Although all programs were adequate, the quality and sophistication of training was consistent with resources and need. The United States Department of Transportation standards were adhered to in all programs, and no Advanced Trauma Life Support or Basic Trauma Life Support programs were currently available. Basic requirements for certification and re-certification were controlled by state statute as a minimum in all instances. In California and Utah, local and regional standards were adhered to in addition to the state requirements. Funding methods varied from full-state sponsorship for paramedic training to the complete cost being the responsibility of the student. In all cases, the degree of sponsorship was dependent upon the level of training and agency affiliation. In Utah, all paramedic training is state funded and conducted at Weber State College in Ogden; whereas in Orange County, California, the training is currently being shifted to a proprietary institution which will be monitored by the local EMS agency.

CONCLUSION

Pre-hospital training may be provided by a variety of resources; however, it must meet minimum standards. The United States Department of Transportation curriculum is accepted as the basic standard for EMT and Paramedic training in most states, and the specialty areas of Basic Trauma Life Support and Advanced Trauma Life Support are currently in the developmental stages. As in Orange County, Salt Lake City, and Virginia, the most desirable educational environment is the college or university setting but the university

affiliation may be in conjunction with a medical school, such as the Medical College of Virginia in Richmond. All Advanced Life Support providers should be trained to Basic Life Support, Advanced Life Support, and Basic Trauma Life Support levels. The State should control certification and re-certification requirements, although regional or local standards which exceed state requirements may be established. All programs should be competency based with adequate practical orientation. Paramedic training is funded by the state or sponsoring agency, whereas the various levels of EMT training are not funded in all instances. Any decision regarding the payment for training for pre-hospital personnel should permit flexibility for the specific dynamics of the training circumstances in each locality.

RECOMMENDATIONS

Pre-hospital training must be developed to meet the minimum standards as set forth by the Department of Transportation curriculum.

Basic Trauma Life Support and Advanced Trauma Life Support, when developed, should be included in the requirements for paramedic certification.

Pre-hospital training must be developed in the college or university setting. This would also allow the paramedic to have an opportunity to achieve a degree.

Certification and training should be competency-based including appropriate practical orientation and supervised field experience.

Funding must be provided to ensure that all EMT and Paramedic practitioners receive proper training, and an adequate number of personnel is available to meet system demands.

COMMUNICATIONS

OBSERVATIONS

Although operationally similar, communications systems ranged from low band VHF to 800 Mhz UHF trunking systems. With the exception of Baltimore and San Diego, the 800 Mhz trunking system was being implemented or evaluated.

Area-wide 9-1-1-E centers were in use in all locations with actual unit dispatch through local jurisdictions. The degree of integration among area communication centers varied; however, cooperation by dispatch personnel was good and the result was effective system status management. Delays in call transfer from the 9-1-1-E centers was the chief complaint of jurisdictional dispatch centers.

Government agencies funded communications centers through Public Safety and/or Fire Service budgets. Some smaller departments contracted with larger agencies to provide this service. Private providers were responsible for communications for their respective agencies. However, in systems such as San Diego, the private provider operated as the primary Advanced Life Support responder and received a subsidy to offset costs of operation. Because of the variety of governmental, private, and volunteer agencies charged with dispatch responsibilities, there was no consistent pattern of dispatch character or of dispatch training. Salt Lake City requires a 16-hour course for all EMS dispatchers and developed a model for a "priority dispatch system."

A major problem for systems in California and Utah dealt with terrain and distance. The increased technological demands of sophisticated EMS communications required the development of strategic receiver sites on mountain peaks to effect satisfactory

performance. Although various methods were used, all systems were successful in establishing necessary connecting links.

Communications systems management varied from specific low volume EMS systems such as Orem, Utah, where public service employees serve as fire fighters and police officers, to extremely high volume centralized county-wide systems such as Orange County, California, and Baltimore, Maryland. In all localities some form of communications master plan is in effect to direct current operations and develop long-range planning for the implementation of state-of-the-art equipment and systems.

CONCLUSIONS

An area-wide communications plan using a 9-1-1-E center is mandatory. Each jurisdiction may need to develop its unique communications plan but all plans should require that principal participating agencies have the ability to communicate via radio.

The use of 800Mhz trunking concept with flexibility and computerized system management capabilities appears to have some distinct advantages and should be considered.

Ideal communication circumstances must be determined by specific local geography and other local factors. The funding for communication systems must be dependent upon political and geographic realities. A significant degree of cooperation and integration is critical. A state-wide plan to govern communication is essential particularly on the issue of 9-1-1, overlapping of frequencies, and access. A full complement of trained dispatchers using a modified priority dispatch system has proven successful in Salt Lake City and San Diego. Competency-based training programs for dispatchers should be developed and utilized.

There should be routine system-wide evaluations conducted on a regular basis.

RECOMMENDATIONS

An integrated and coordinated area-wide communications plan using 9-1-1-E centers should be developed.

The 800 Mhz trunking system maximizes communications and its effectiveness should be evaluated.

Funding must be obtained to ensure integrated development of all area systems and avoid over-lapping and maximize frequency use. This effort must include coordination with an EMS-state communications plan.

A structured dispatch training and certification program must be developed for dispatchers. This program should be competency-based and standardized for the area.

A modified priority dispatch system should be thoroughly evaluated and implemented.

A system-wide evaluation should be conducted on a regular basis.

TRANSPORTATION

OBSERVATIONS

Transportation responsibilities were fulfilled by paid professional rescue services in Baltimore City, volunteer rescue agencies in some Maryland and Virginia suburbs, and private transport agencies in the

City of San Diego. In some areas of Utah, law enforcement personnel are responsible for segments of the pre-hospital transport service. Transporting agencies conducted periodic assessments of their equipment needs. Each system had air ambulance service provided by either private air ambulance companies operating out of health care facilities, as in Jacksonville; municipal rescue services in Dade County; or law enforcement agency helicopter services in Maryland. The licensing standards for ground and air transport services varied but were primarily controlled by the State. The system for first response and transport units varied greatly. One-tier and two-tier systems were observed with a variety of combinations ranging from totally public, municipal systems to combination public and private systems. One-tier systems are employed by Baltimore City with a government-operated response and in San Diego City by a private contract ambulance service. Salt Lake City operates a five-man rescue fire engine for first response with transportation provided by one private operator. The reported response time criteria varied, but was not felt to be a significant problem in any of the systems visited.

The number and certification of attendants on board both ground and air transport vehicles varied from two paramedics in the treatment area to only one paramedic on the unit. The term "paramedic" also denoted varying levels and sophistication of training from state to state.

In all systems there was strong integration of air units with ground units. The authority to request an air ambulance varied from locale to locale. In locations that had primarily private air ambulance providers, the authority to request an air ambulance was virtually limitless. In most of the systems visited the payor for both ground and air transport was the patient himself; and it was felt that both ground and air services were not charging a representative amount in relation to the cost of providing those services.

Significant changes in the transportation system occurred with the implementation of a trauma system. Centralization of hospital care, quality assurance activities, greater transportation distances, improved communications, standardization of protocols and services, increased public awareness, and integration of pre-hospital services were the result of participation in the trauma system.

CONCLUSIONS

The responsibility for first response and transportation may vary from locale to locale; however, the emphasis must be placed on prompt, quality service without regard for ability to pay. Periodic assessment of the response and transport systems must be made to ensure compliance with established response time criteria and availability of the proper equipment. Air ambulance services may be provided by either private or public components with the emphasis on availability and accessibility.

State-generated standards for all ground and air services and personnel are necessary to ensure quality control. In addition to certification and re-certification, a system for evaluation and enforcement must be in place on a state, regional, and local level.

One-tier and two-tier systems are effective as long as smooth patient disposition is accomplished without delay. A full complement of paramedics is required to provide the appropriate level of service and two paramedics in the treatment compartment are ideal for both ground and air transport. Payment for services varied in both ground and air transportation. In most cases the direct-patient payment was not commensurate with the actual cost thus requiring public funding.

The implementation of the trauma system resulted in the centralization of hospital care, increased quality assurance

activities, greater transportation distances, improved communications, standardization of protocols and services, and a better integration of the pre-hospital phase of patient care.

Authority to request an air ambulance should reside with the medically responsible individual with the most direct patient responsibility.

RECOMMENDATIONS

A thorough evaluation of the first response and transportation component should be made to ensure maximum efficiency with existing resources.

Response time criteria for all levels of patient condition should be developed, monitored, and subject to periodic assessment.

Dade County has recently expanded its aeromedical program to meet identified needs. Currently, daily missions equal six per aircraft.

Proper utilization of the air ambulance component should be periodically evaluated by the Trauma Advisory Committee.

A complete cost analysis should be instituted to determine the true impact of the pre-hospital phase so that sufficient funding may be allocated as needed.

The Local Trauma Advisory Committee should develop definitive criteria to ensure pre-hospital providers are included in all phases of system development, implementation, and review.

TRIAGE CRITERIA

OBSERVATIONS

All systems appeared to be employing good triage criteria, however, there were significant differences in the degrees of compliance with published criteria. In Virginia the on-scene paramedic was permitted to make the final decision, whereas in San Diego and Orange County the decision to enter the trauma system was the responsibility of the base station hospital control personnel. The CRAMS Score, mechanism of injury criteria, and Glasgow Coma Scale were used in differing combinations to establish transport criteria. Systems have recognized the need to change triage criteria within their system, and have attempted to develop more definitive criteria assessment protocols. All systems visited had strong medical direction with the medical director providing from 25% of his time in Orem and Provo, Utah, to 100% in Salt Lake City. In San Diego a medical advisory committee actively advised the system medical director.

All systems had legislation and/or policies in place that permitted the transportation agencies to bypass local hospitals enroute to trauma centers. In Baltimore and San Diego trauma patients were always taken to trauma centers, whereas local hospitals were occasionally not bypassed and did receive trauma patients in Virginia and Utah. There was no notice of any specific legal action with relation to this discrepancy.

CONCLUSIONS

A quickly applied, uniform set of criteria should be utilized to apply to the scoring of each injured victim. At the present time there is no definitive consensus on the availability of such a set of criteria.

Criteria should be established by an integrated multi-specialty group. The criteria must be monitored and evaluated in a uniform fashion and with reasonable frequency. Scoring criteria should serve as the basis for a comprehensive triage protocol.

The medical director should be a physician with knowledge of both pre-hospital care circumstances and issues. This must be a compensated position and operate with a medical advisory staff.

Legislation must exist which allows patients to by-pass local hospitals and go to trauma centers. The system should be closely monitored to guarantee that patients will be taken to the appropriate trauma facility when the patient meets trauma criteria.

A reasonable degree of over-triage is acceptable in order to eliminate or drastically reduce under-triage.

Inter-hospital transfers for patients meeting trauma criteria should be accomplished without delay or consideration of the patient's ability to pay.

RECOMMENDATIONS

Definitive triage criteria must be established by a medical advisory board to the Local Trauma Advisory Committee.

Establish a monitoring mechanism to ensure that triage criteria are periodically evaluated and updated to provide for system change.

Employ a full-time system medical director who should direct all medical components of the trauma system.

Develop and propose legislation which will ensure that trauma patients will all receive care at the appropriate trauma center

without regard for the ability to pay. This legislation will address inter-hospital transfers as it relates to trauma.

Reduce under-triage by developing appropriate triage protocols for the entire trauma system.

4.3 SYSTEMS EVALUATION/ QUALITY ASSURANCE ISSUES

QUALITY ASSURANCE

OBSERVATIONS

All systems/sites visited were working toward a quality assurance program. While not all sites emphasized the need for Quality Assurance (QA) on both a facility and a system-wide level, QA was considered an essential need to the proper functioning of a trauma system.

Dade County does not have an established QA program systemwide. The trauma center is responsible for its own QA.

CONCLUSIONS

QA programs are an essential component to a trauma system. The QA program serves as the centerpiece to evaluate the system performance. (See American Journal of Surgery, Volume 154, 1987, p.79).

Trauma systems should have the power to utilize registry data to fine-tune the system. Feedback is essential. The San Diego and Maryland systems offer the best examples of this.

RECOMMENDATIONS

Dade County should establish a trauma network system QA program.

The quality assurance program should include a multi-disciplinary committee. The QA program should:

- Provide information from the trauma registry concerning all aspects of trauma care.
- Establish a mechanism to maintain a confidential and non-discoverable status to encourage open and critical analysis of patient outcome.
- Conduct ongoing preventable death studies.
- Provide continuing medical education.
- Provide recommendations for public education.

The County should seek an outside agency such as the American College of Surgeons, American College of Emergency Physicians, or another trauma network task force to do a site visit and review performance in:

- Complying with standards of all applicable agencies.
- Providing recommendations for legislative change.
- Reviewing reimbursement issues.
- Providing supportive management and technical assistance.

Q . A . M A N A G E M E N T

OBSERVATIONS

Quality Assurance for pre-hospital care providers was handled through the local or state EMS Agency in San Diego, California, whereas on an individualized basis with the involved facility in Jacksonville, Florida.

Trauma triage criteria varied from system to system. In all systems visited, the trauma triage criteria were not strictly followed.

Committee membership of QA programs varied among the different systems. While numbers varied, all systems had QA committees with at least a trauma surgeon, a trauma nurse coordinator, a medical examiner, and a pre-hospital provider as common elements.

The make-up of QA panels depended upon how QA was conducted, i.e., whether it was within an individual facility Morbidity and Mortality conference as in Orange County, California and Jacksonville, Florida; or by system-wide review in San Diego, California.

CONCLUSIONS

Pre-hospital care providers should establish internal QA programs for self-assessment.

Individual hospitals were involved in competitive marketing for patients. Pre-hospital providers were accorded wide latitude in "paramedic judgement" and not necessarily bound by trauma scoring systems; therefore, base hospitals did not normally criticize EMS

decisions as good working relationships assured maximum patient load.

QA committees should include representation from paramedics, emergency room physicians, trauma surgeons, trauma nurse coordinators, hospital administrators, and medical examiners.

QA needs to be done at both a facility and system level. While individual hospitals may review their own experience through Morbidity and Mortality conferences, a formal QA committee should evaluate the system as a whole.

RECOMMENDATIONS

Dade County pre-hospital care providers should establish their own QA program for their departments. Pre-hospital QA efforts should be removed from base hospitals. The Paramedic Coordinating Council of Dade County should be utilized as a pre-hospital QA forum.

In accordance with the Florida Trauma Care Act, Dade County should establish trauma triage criteria which would be functional within Dade County.

The Local Trauma Agency (established by the Trauma Care Act) should establish a multi-disciplinary QA program.

The Local Trauma Agency's QA committee can augment individual trauma hospital review, but must have the power to enforce existing regulations and standards.

The Local Trauma Agency's QA committee should oversee all trauma QA activities (including those done at individual facilities and pre-hospital level).

QA programs need to be protected from discovery.

PUBLIC EDUCATION

OBSERVATION

Public education (system access and trauma prevention) was found to be a low priority in some systems and completely absent in others.

CONCLUSION

Public education should be a significant feature of a trauma system.

RECOMMENDATION

Public education programs need to be increased. There should be 9-1-1-E access to pre-hospital emergency or trauma care. Educational programs such as those presented by Orange County, California--"Staying Alive", or the American Trauma Society--"Tommy Trauma" should be encouraged.

TRAUMA REGISTRY

OBSERVATION

The approach to collecting of trauma data was not uniform, with data base elements varying from site to site.

CONCLUSIONS

Trauma registries are the focal point of the QA system. Trauma registries are the mechanism by which trauma patients are "tracked" through the system. Data should be maintained at a facility level and funnelled to the system registry. Registries on a local level should be consistent in the method of data base collection and terminology.

The standard Cales registry, modified for local environmental factors, is suitable. The registry already in place in Dade County may be modified to be more efficient. Funds should be allocated for an additional trauma care nurse coordinator. Cases should be reviewed based on a set of guidelines instituted by a trauma audit committee. (See Journal of Trauma, Volume 25, 1985 p. 181.)

RECOMMENDATIONS

Dade County has an established trauma registry using elements of the Cales registry. This registry should expand and grow in specificity.

The Dade County Trauma Registry personnel should work with the State to develop a minimum data set for trauma. Data should come from pre-hospital care providers, trauma centers, non-trauma centers, and the medical examiner's office. Uniform information collected at an individual facility should be sent and collated by a system registry. Registry functions should include:

- Data collection for review at QA conferences.
- An "Injury Registry" incorporating data from non-trauma facilities.
- Feedback provided to all participants

Trauma registries should contain a minimum data base.

Dade County should hire additional trauma care nurse coordinators to enter data into the registry and also screen cases for review.

EMS run-data should be coordinated with hospital registry data. Patients entered into the registry at the time of first response should be given unique trauma numbers as the use of social security numbers or other standard identification is not feasible in many urban areas.

We suggest adoption of programs similar to those in Maryland and California whereby uncompensated and/or undercompensated trauma patients are retroactively granted Medicaid status if appropriately entered into the trauma registry. This not only minimizes the economic impact of indigent or under-compensated patients on the trauma center but also acts as an incentive for hospitals to enter trauma patients into the registry.

AUTOPSIES

OBSERVATION

Autopsies are not mandatory or standard within some trauma systems such as Salt Lake City, Utah.

CONCLUSION

The medical examiner plays a key role in trauma care and the evaluation of preventable deaths. (See Journal of Trauma, Volume 21, 1981, p.32.)

RECOMMENDATION

Autopsies for all patients with traumatic injuries should be obtained.

4.4 UNCOMPENSATED CARE, TORT CLAIM LIABILITY, MALPRACTICE INSURANCE ISSUES

FUNDING

OBSERVATIONS

Adequate funding for physicians and hospitals for trauma care was found to be a significant factor in successful operations of all Trauma Systems.

Funding is an increasing concern in all Trauma Systems including Florida. This is due to reimbursement cutbacks in Medicare DRG's, Medicaid, HMO's, and the increasing number of un-insured or under-insured. Future additional funding cutbacks are anticipated.

Trauma patients in all sites visited represent a higher proportion of under-funding than all other patient categories (45-50%). In addition, Florida had the lowest percent of trauma patients covered by private insurance (30%).

In all states visited, some form of funding exists to offset the cost to hospitals. Variables which contributed to that funding are:

- A. Reimbursement for hospitals from all payor sources (at 50 - 60% of charges) and physicians (at a slightly lesser rate).
- B. Medicaid coverage retroactive to first day of acute care is applicable despite the fact that the initial service was rendered prior to enrollment.
- C. More liberal criteria for Medicaid eligibility and easier access to enrollment.

CONCLUSION

The success of a trauma system is dependent on sufficient funding. Any community looking to establish a trauma system must provide special funding sources and mechanisms to ensure the fiscal viability of trauma systems. This funding must cover both pre-hospital and hospital care by the following viable sources and mechanisms:

1. Medicaid funding with ease of access and presumptive eligibility.
2. Variance from current DRG reimbursement for Medicare patients.

RECOMMENDATIONS

Dade County should aggressively pursue State Legislation to provide funding for uncompensated and undercompensated trauma care. We recommend:

- A. Adoption of programs similar to those in Maryland and California whereby Medicaid eligible trauma patients are retroactively granted Medicaid status if appropriately entered into the Trauma Registry with presumptive eligibility at Trauma Centers.
- B. As in the Maryland program, pursue a Medicare waiver for Trauma Cases treated in Trauma Centers.

NON-RESIDENT FUNDING

OBSERVATION

Special funding is not available for specific categories of indigent trauma victims from either the state and/or county; i.e., aliens, out of state and out of county residents. In Dade County and Southern California aliens/non-residents present a specific funding problem which further impacts on the financial viability of their trauma systems.

CONCLUSION

The success of any system necessitates that all potential financial drain on the system be addressed as to the appropriate source of funding. An alien or non-resident population was found to have placed a financial pressure on established systems where either local governments or individual hospitals have had to absorb the cost of providing their trauma needs.

RECOMMENDATIONS

The Federal government should provide funding for the alien population when federal policy allows for a significant influx of aliens to a given community.

Inter-county transfer or funding agreements should be developed.

VEHICLE INSURANCE

OBSERVATION

Motor vehicle accidents account for 70% of trauma victims. While in Dade County only 30% of motor vehicle accident victims had adequate personal liability insurance, nationwide it is greater than 50%.

CONCLUSION

Outside of Florida auto insurance requirements are more strictly enforced, and penalties applied for noncompliance, resulting in greater compensation available for patients in this category.

RECOMMENDATIONS

Dade County should aggressively pursue State legislation to provide funding for motor vehicular accident trauma victims. We recommend:

- A. Enforced strict compliance with the States mandatory auto insurance laws.
- B. Increased mandatory Personal Injury Protection (PIP) limits.
- C. Make bodily injury insurance mandatory in the State of Florida.
- D. Earmark an auto license and/or driver's license tax and/or a moving violation fine with monies dedicated for trauma care.

PROFESSIONAL LIABILITY

OBSERVATIONS

Malpractice insurance is available and more affordable in all sites visited other than Dade County (see attachment on Malpractice Premiums comparison). It is difficult to accurately gauge the impact of factors affecting this, however the following have been observed:

- A. Tort Reform (see attachment 6.5 on Medical Malpractice Legislation1971-1985).
- B. The development of alternate Insurance Plans and more stringent regulation of the Insurance Industry (see attachment 6.4 on Medical Malpractice Laws Comparison).
- C. Strengthened State supervision and discipline of health care providers.

The presence of an organized, effective Trauma Network raises the level of trauma care delivered at Trauma Centers.

The presence of the Good Samaritan Act and sovereign immunity provides "a cushion of comfort" to physicians and emergency medical personnel.

In the sites visited, no increased premium costs were related to participation in Trauma care except in Jacksonville (St. Paul's Insurance Company).

Some physicians and hospitals administrators perceived that malpractice issues pose an increasing threat in trauma cases, despite currently available data which does not support this perception.

CONCLUSIONS

Affordable malpractice premiums and available malpractice insurance coverage must exist to ensure a viable Trauma Network. The variable factors which affect the affordable and available malpractice insurance goes well beyond the narrow focus of the Trauma Task Force. Some of these variables are noted in this Committee's observations. They must be addressed on a broader scale in order to make malpractice insurance available and affordable.

In all sites visited, trauma cases do not represent an increased risk to hospital and physicians participating in an organized trauma center.

Statistically, trauma patients are currently not the origin of increased malpractice cases in a trauma center.

RECOMMENDATIONS

The Local Trauma Advisory Committee should recommend that the appropriate legislative body aggressively pursue the development of state legislation to ensure that available and affordable professional liability insurance exists.

Develop a mechanism to access and publish accurate data to prove or disprove the belief that trauma cases represent an increased risk to hospitals and physicians participating in an organized trauma system.

5.0 SITE VISIT REPORTS

**5.1 SITE VISIT
JACKSONVILLE, FLORIDA**

INTRODUCTION - FLORIDA/JACKSONVILLE

The State of Florida is located in the extreme southeast section of the United States on a large peninsula between the Atlantic Ocean and the Gulf of Mexico. The total land area of 54,136 square miles supports a population of 11,675,000 with an average population density of 210 per square mile in an urban environment. Eighty-five percent of the state's population lives in an urban environment. Florida ranks 5th in population and 22nd in total land area.

Of the total population 83.9% are White and 13.7% are Black. Approximately 10% are Hispanic. Florida has experienced a net increase in population of 19.8% in the last six years. Per capita income is \$14,281 and unemployment is 5.7%.

Jacksonville is located in the northeastern part of Florida. It has a population of approximately 800,000 people. The city is unique because the city's boundary encompasses almost the entire county making it one of the largest cities in the United States with a land area of 760 square miles. The St. John's River divides the city into a northern and southern section linked by a series of drawbridges. Jacksonville has experienced a population growth of less than 10% per year and maintains a balance of 9.6% over age 65 and 60% under age 35.

TRAUMA SYSTEMS ISSUES

System Management

A group of Jacksonville physicians led by Dr. Roy Baker provided strong leadership and physician direction in the development of Jacksonville's trauma system. Doctor Roy Baker, a cardiologist who became Chairman of the Board at University Hospital and was known as the "Prince of Trauma," was vital in establishing the Fire Surgeons Board which directs system activities. Doctor Robert Kiley, currently Medical Director of the Board, works closely with Doctor Baker and provides an administrative focus for the continued development of the medical component and transportation system protocols.

The Fire Surgeons Board exerts its influence over the system by providing policy recommendations and medical direction to the Mayor and Fire Chief who have the administrative authority to establish overall policy. Membership consists of representatives of each hospital, the fire department, and the general public.

Regulatory authority for the current management structure is derived from a series of local and state EMS laws, many of which were written with the assistance of individuals currently involved in the management of the Jacksonville trauma system.

A master trauma plan does not exist in Jacksonville nor is there a formal means for gathering information on the type of trauma needs that may exist. There does not appear to be a mechanism in place for the development and evolution of a plan based upon community needs, however, some coordination is accomplished by the Fire Surgeons Board.

The System

Initially, trauma care in Jacksonville was provided by local community hospitals. These hospitals provided emergency medical service to trauma victims within their immediate area who were brought to that hospital by the fire rescue service. Each hospital had its own criteria for determining what constituted trauma care and for any assistance that they would require from other hospitals.

With the introduction of the Life Flight Helicopter into the community, the beginnings of a trauma system began to be recognized. The trauma system then included the University Hospital and the community hospitals providing trauma care. These hospitals were serviced by the fire rescue service which provided the transportation system.

The helicopter transportation capability of Baptist Hospital in its Life Flight Program was the next component to be introduced to the system. Life Flight was initially introduced as a means of expanding the service area of Baptist Hospital and to allow trauma patients to be brought to Baptist Hospital for trauma services. It was thought that this would provide a marketable public service and revenue-producing benefit to Baptist Hospital. The two hospitals with available helicopters provided service to all the local trauma institutions rather than just their parent institution.

The Level I trauma hospital provides services to Jacksonville as well as a southeastern regional area covering southern Georgia, and northern and middle Florida. In the areas outside Jacksonville, it provides services that are not available in these locations.

There have been continued changes and modifications to the overall management structure since its initial implementation. These changes have been primarily concerned with the continued refinement of the trauma system triage.

Trauma Center Management

Each local hospital is allowed discretionary authority in its trauma management structure. Hospitals respond to the advice and direction of the Fire Surgeons Board, but are not directly linked to each other. A central formal management structure does not exist other than the "system" effort to meet state and local requirements for an emergency medical system as part of the trauma system.

An informal system of communication exists between hospital staff members to provide coordination. However, while the policy development in the Jacksonville system is somewhat centralized, it is left for each hospital to interpret the methods that it will use to implement those plans. The Fire Rescue system personnel are free to make triage decisions at the scene although they have available protocols. However, should the rescue person determine in his opinion that there is not a need for trauma care it is within his discretion to discuss this situation with the patient and reach a conclusion independent of the guidelines established by the Fire Surgeons Board. Consequently, patient's desires regarding hospital destinations are considered, despite established protocols.

Inter-facility transfers are accomplished by physician-to-physician communication. The admitting physician has sole decision-making powers in this regard.

Financing of trauma hospitals is derived principally from insurance payment and other sources of revenue from patient treatment. Differences of opinion exist among the hospitals regarding profitability of trauma. Financing for a trauma staff is only apparent at the University Hospital. The Fire Department, supported by local tax dollars, provides pre-hospital transportation. One helicopter is financed by Baptist Hospital; the other is supported by University Hospital. Participation on the Fire Surgeons Board is voluntary.

Only one hospital, the University Hospital, receives funds for its operation from the City of Jacksonville. This results in a more stable environment for the physicians. Other hospitals operate under their own financing and enter the system at their discretion, remaining within it as long as they see a recognizable benefit in support of their organization's objectives and goals. Because of this, there has been a changing membership among the hospitals making up the Level II trauma system service providers.

Hospitals in Jacksonville continue to withdraw from the system due to uncompensated care concerns and physician malpractice issues.

PRE-HOSPITAL CARE/AIR AMBULANCE SYSTEMS ISSUES

Primary Pre-Hospital Provider

The primary pre-hospital provider in the City of Jacksonville is Jacksonville Fire-Rescue. This is a Fire Department operating under the direct supervision of the Public Safety Department. A Deputy Director of the Public Safety Department serves as Fire Chief and directly supervises a Fire Rescue Division Chief who, in turn, is directly responsible for the operation of the Rescue Division. This division utilizes sixteen Advanced Life Support (ALS) Rescue vehicles, two Advanced Life Support fire suppression vehicles, and one Basic Life Support (BLS) transport van. Five ALS rescue vehicles are based in area hospitals with the remaining vehicles operating out of area fire stations. It was stated by rescue administrators that an increase to twenty ALS rescue vehicles was proposed.

Rescue vehicles are staffed by Florida Certified Paramedics. Ninety percent of vehicles operate with two paramedics, while the remaining vehicles utilize one paramedic and one Emergency Medical Technician (EMT). On trauma and other critical responses, the rescue unit is assisted by an engine company and a rescue chief.

Patient treatment is by Standing Operating Procedures (S.O.P.) Protocols are developed and reviewed by a medical director who receives input from a Board of Fire Surgeons, an advisory board to the system. Membership on this board is comprised of physicians from area hospitals. On-scene medical direction by hospitals or the medical director is rarely required as treatment is rendered according to standing orders. Medical consultation is verbal only with no transmission of electrocardiography.

Jacksonville Fire-Rescue responds to approximately 40,000 calls per year, of which 85% are rescue-related. Citizens obtain access to the emergency service system in Jacksonville through a centralized enhanced 9-1-1 telephone system.

Other Pre-hospital Providers

Jacksonville uses a helicopter transport system for critical patient transport and inter-facility transport. The helicopters are privately owned, hospital-based, and operate without a contractual arrangement with the City. Response is on a rotating basis by request of the on-scene paramedic (or hospital for inter-facility transfer). Criteria for request is a five minute time saving during transport. No subsidy or payment is received from the city for this service. Patients are billed directly for the service at competitive rates, and hospital personnel noted that a collection rate of approximately 50% has been maintained. Fifty-five percent to sixty-five percent of helicopter transports return to the sponsor hospital since on-scene personnel determine destination. Currently two helicopters are operating in Jacksonville. Each responds approximately 80 times per month. This service has been available in Jacksonville for several years.

Private ground ambulance service in Jacksonville is operated independently from the City system and has no relationship to Fire-Rescue. If the City Rescue unit does not transport a patient, a list of private providers with phone numbers is given to the patient to access as desired.

Trauma System Organization

The city of Jacksonville has had a "Trauma System" since about 1980. The number of trauma centers has fluctuated from as many as eight hospitals in the beginning to the current four, one Level I and three Level II. There was definitely a degree of uncertainty as to the exact status of some of the hospitals receiving trauma patients. This was particularly true at the pre-hospital level, but it was also true for some trauma surgeons, emergency physicians, and nurses.

Even though the Medical Director of Jacksonville Fire Rescue is responsible for establishing transportation protocols with advice from a Board of Fire Surgeons (physicians from area hospitals), we did not identify a separate authority dedicated to coordinating the Jacksonville Trauma system as a "system."

Triage Criteria

Initially, the trauma score was used to determine when a trauma patient required transportation to a trauma center. Patients with a trauma score of 8 or less were transported to the Level I Trauma Center and those with a trauma score in excess of 8 were transported to the Level II Trauma Centers.

More recently, the comprehensive Trauma Triage Criteria recommended by the American College of Surgeons (ACS) Committee on Trauma were adopted. These criteria are part of the Jacksonville Fire Department's Medical Protocol

It is notable that some trauma center staff felt that the volume of trauma patients transported to them has remained stable or perhaps even declined despite the decrease in the overall number of verified trauma centers. This apparent contradiction was explained in part during interviews with pre-hospital providers, where we learned

that not all patients meeting the ACS Trauma Triage Criteria were transported to a trauma center. Paramedic judgement, and in some cases the patient's choice of hospital, actually determined the medical facility to which these patients were transported.

When a trauma center is overwhelmed with trauma patients it goes into condition "red" by notifying the central communication office of the City of Jacksonville Fire Department. Condition red is a temporary closing of the trauma center. When the two nearest trauma centers to the scene of a trauma patient are in condition red, Fire Rescue will transport the patient to the closest trauma center.

Quality Assurance

No organized quality assurance program in the pre-hospital phase was identified. Occasionally, the Medical Director of the City Fire Rescue system responds to trauma calls and supervises scene management.

Trauma Registry

Currently, there is no trauma registry for the system. Although some hospitals maintain their own statistics, specific data concerning mechanism of injury, hospital destination, method of transportation, and other pertinent data is essentially non-existent, thereby making objective conclusions relative to the actual effectiveness of the "system" difficult.

System Rates

Fire-Rescue	\$90.00	Response Charge
	\$3.25	Per Mile
University Hospital	\$82.50	Response Charge
(helicopter)	\$8.25	Per Mile
Baptist Hospital	\$100.00	Response Charge
(helicopter)	\$6.00	Per Mile

SYSTEM EVALUATION AND QUALITY ASSURANCE ISSUES

Quality assurance is the tool by which a system is evaluated. It is an important mechanism which should be assessed by all parties concerned. While we could not demonstrate a true mechanism for quality assurance, there are attempts at quality assurance throughout the trauma system.

The fire-rescue system has a protocol for major trauma and follows this when making a decision to transport a patient to the trauma center. Upon speaking with representatives from Jacksonville Fire-Rescue, it was unclear if these protocols were strictly adhered to, especially when a perceived uncompensated or under-compensated trauma patient was involved. The casualty reports are reviewed by a supervising officer within the rescue department. Each trauma center representative we spoke with stated that any problems that occurred with rescue were dealt with on an individual basis. If the problem were recurrent, the issue was taken to the Board of Fire Surgeons. It was then up to the Board of Fire Surgeons to determine what action may be necessary.

The Board of Fire Surgeons oversees and sets policy for the rescue system in Jacksonville. Along with the Medical Director, the Board has the responsibility for all medical direction of the Jacksonville Rescue System, and is responsible to report its recommendations to the Director of Public Safety. It was also determined during our discussions that there was no formal inter-facility communication between trauma centers or with Fire Rescue. Each member of this system appeared to be doing "his own thing."

Two of the trauma centers we visited had no documented quality assurance program. Statistics were unavailable to us, therefore we were unable to determine volume, patient acuity, or appropriateness of the care delivered. University Hospital, through the Department of Surgery, does have a trauma registry. University Hospital has just

employed a data registrar to follow the patients during their hospitalization. While University Hospital is collecting this data, it is not presently being utilized for feedback purposes; it is mostly raw data at this time.

Only one trauma center visited had an identifiable trauma staff. Each of the other centers, while they had areas in which to resuscitate the trauma victim, utilized the present emergency room staffs for the care of the critically injured. A trauma center has the option of going on "Trauma Red" when they feel they are unable to adequately care for the trauma patient. Each center has its own criteria for going on "trauma red." This decision is made by the emergency physician or trauma surgeon without the need to confer with the hospital administrator. (University Hospital is the only facility with written criteria of when to go on "bypass.")

It was not established that plans for a county-wide registry was in the works, yet University Hospital does well in establishing a leadership role in this issue. Attempts at quality assurance review were apparent throughout the trauma system, but not on an organized or system-wide basis.

**UNCOMPENSATED CARE, TORT CLAIM LIABILITY
AND
MALPRACTICE INSURANCE ISSUES**

The questions propounded to this subcommittee for answering can basically be broken down into two general questions: Does uncompensated care impact on the organization and support of a trauma system; and, do tort claim liability and malpractice insurance issues impact on the organization and support of a trauma system?

The information compiled by the subcommittee on the issue of uncompensated care was almost exclusively by interview since almost no written nor statistical data was presented or available.

Uncompensated Care

Physicians and administrators from University Hospital (Level I), Baptist Hospital (Level II), St. Luke's Hospital (Level II), and St. Vincent's Hospital (Level II) were interviewed. All four of the hospitals were still a part of the trauma network. In the Jacksonville area, approximately four or five hospitals had withdrawn from the trauma network which was originally a nine to ten hospital network. The individuals interviewed reported that uncompensated care was a very severe concern and definitely impacted the trauma system and was probably the reason why the other hospitals had pulled out of the trauma network.

Uncompensated care for the physicians was felt to be the primary problem while uncompensated care for the institution was secondary, but still an important problem. Only one hospital, University Hospital which had both a city and state affiliation, received any reimbursement from the state for indigent care.

Hospital representatives noted that University Hospital was a teaching hospital which was affiliated with the University of Florida. As a result, University Hospital received some type of state funding, although the extent or the means of funding was not totally discernable. At bare minimum, the State University affiliation allowed the hospital to compensate both the physicians and residents on its staff for the care and treatment that they provided to the trauma victims. None of the other hospitals in the trauma system nor the physicians on their staffs received any reimbursement for indigent care.

It was reported to the subcommittee that one of the Level II hospitals, Baptist, actively sought trauma patients while the other hospitals were not as aggressive and probably acted as overflow institutions for University and Baptist, each of which had a helicopter available for the transport of trauma patients.

The physicians from Baptist Hospital stated that their patient mix had changed after Baptist had become part of the trauma system; their collections on trauma patients dropped from seventy to eighty cents on the dollar to approximately thirty to forty cents on the dollar. The other Level II hospitals, St. Luke's and St. Vincent's were not as aggressive in trying to attract trauma patients as Baptist and, it must be noted, they were located in more affluent neighborhoods than Baptist. St. Luke's and St. Vincent's did not report an appreciable change in the patient mix after they received their trauma center designation. Baptist and University Hospitals, through their helicopter services, obviously tried to reach out to other more affluent neighborhoods to increase their payor/patient mix.

On the other hand, there was a suggestion that a trauma designation could improve the payor/patient mix. An official of University Hospital reported that it apparently has an improved payor/mix since its designation. The hospital now receives both funded and indigent patients through the trauma network; whereas, prior to its

designation, its trauma patient population was almost exclusively indigent. University Hospital officials further reported that following a marketing campaign, the University Hospital has entered into contracts with outlying hospitals to handle their trauma patients, both funded and indigent, and as a result, University Hospital has improved its payor/patient mix.

Although no specific ideas or plans were proposed, the individuals interviewed stated that dollars for uncompensated care were vitally needed whether it be from a state fund, tighter automobile insurance laws, or a tax on licenses.

Tort Claim Liability and Malpractice Insurance

The information compiled by the subcommittee on the issues of Tort Claim Liability and Malpractice Insurance was almost exclusively by interview since almost no written or statistical data was presented or available.

The tort claim liability and malpractice insurance issues did impact the trauma system, as those interviewed reported that "some physicians were using trauma to make their point about increased malpractice premiums in general." As a result, a perception was created and there was a suggestion that some surgeons might withhold services, but that had not yet happened. Representatives of University Hospital and Baptist Hospital were familiar with the Florida Department of Insurance statistics which did not show that the trauma system had a significant impact or contributed to increased tort liability claims or increased malpractice premiums. In Jacksonville it was reported that St. Paul Insurance Company did increase the classification level for the malpractice premiums of surgeons handling trauma patients, although no information was presented to explain this increase in light of the Department of Insurance statistics.

Those interviewed reported that if the issue of escalating malpractice premiums of certain specialists did not exist, problems in the trauma network system would predominantly remain the same because of uncompensated care.

5.2 SITE VISIT BALTIMORE, MARYLAND

INTRODUCTION - MARYLAND

Maryland is located in the Middle Atlantic area of the east coast near Washington, D.C. The total land area of 9,891 square miles supports a population of 4,463,000 with an average population density of 444 per square mile in an urban environment. This population is roughly equivalent to that of Dade and Broward Counties in South Florida. Eighty percent of the state's population lives in an urban environment. Maryland ranks 19th in population and 42nd in total land area of all the states.

Of the total population 74.9% are white and 22.7% are black. Approximately 2% are Hispanic. Maryland has experienced a net increase in population of 5.8% in the last six years. Per capita income is \$16,588 and unemployment is 4.5%.

In addition to a large permanent population, there is a large transient population. The "Northeast Corridor" between Washington, D. C., and New York City is possibly the busiest car, train, and airline sector in the U.S.

The Chesapeake Bay virtually divides the state in half with the western half containing the more densely populated Washington/Baltimore Metropolitan Area and the eastern half containing mostly rural, agricultural and recreational areas.

TRAUMA SYSTEMS ISSUES

In 1973 through an executive order of the then governor of Maryland, Marvin Mandel, a state-wide EMS system was created. The order called for the establishment of the Maryland Institute for Emergency Medicine. It also gave the Center for the Study of Trauma autonomy within the University of Maryland. By state law, the Director of the Institute, Dr. R Adams Cowley, was given wide powers to "coordinate a statewide system of emergency medical services." The Institute was provided with the staff and funds in the state budget and the director was given the additional responsibility, or power, to "administer State and Federal funds for emergency medical services in the State."

In 1979 the University of Maryland Board of Regents made The Maryland Institute for Emergency Medical Services System (MIEMSS) an autonomous organization. Previously, the Institute was governed by the University of Maryland Hospital. During this same year, MIEMSS published "Echelons of Trauma Care." This document enumerated the requirements and responsibilities of the various components of the evolving state EMS system, specifically; MIEMSS, University Trauma Centers, and area-wide trauma centers. Facilities that were interested in participating in the state EMS system had to provide specific capabilities and had to "establish and utilize" multiple medical protocols for the treatment and care of the traumatized patient. These protocols had to be "similar to those previously created by MIEMSS." This document also had specific requirements for medical staffing and support services including communication systems, quality assurance programs, and educational programs at the hospital level. Also included were generalized criteria regarding which patients should be transferred to the various echelons of trauma care.

Before 1984 the bylaws of the Maryland Trauma Center Network (the "Network"), policy decisions apparently were made primarily by the

personnel of MIEMSS, with some input from those who were members of the specialty referral centers and area-wide trauma centers. With the publishing of the bylaws, policy decisions were formalized within the forum of the "Network."

The membership of the "Network" includes: the Chief Executive officers from the area-wide and university trauma centers and the Shock Trauma Center. These are the official voting representatives. Other members are the director of trauma services and the trauma coordinator from each of these facilities. Affiliate members, who are not allowed to vote, include: the five regional medical directors, the MIEMSS regional administrators, the director of MIEMSS, the CEO of each specialty referral center, and the chair-person of the regional EMS advisory council. This council meets quarterly and is "the principal deliberative body for issues affecting the trauma centers." These issues include, but are not limited to: "inter-hospital transfers, patient treatment, transportation policies" and other issues "primarily related to the delivery of patient care in the clinical setting."

Medical protocols as established by MIEMSS and the "Network" are not rigid. The system allows for some flexibility and change at the regional level, but not at the individual hospital level.

MIEMSS has several functions. It is a state-run agency charged by the state legislature with the initial organization, and now with the current management, of a state-wide EMS system. It is also at the pinnacle of the pyramid of the "echelons of trauma care" responsible for providing state-wide care to the most seriously injured patients with multi-system trauma. Additionally, it performs as an area-wide trauma center in Baltimore City and is the state-wide specialty referral center for neurotrauma.

The director of MIEMSS, R Adams Cowley, M.D., and a deputy director, Ameen I. Ramzy, M.D., who is also the state EMS director, both work for the State and have University of Maryland faculty appointments. A "Memorandum of Understanding" is the contractual agreement

between MIEMSS and both area wide and University Trauma Centers. A provision of this document allows MIEMSS to conduct "announced and unannounced site visits to determine whether all elements of the trauma program in Echelons are being carried out optimally by the Hospital." In our limited review, it was our observation that these site visits are rarely performed. However, Dr. Ramzy stated that "in a single two-month time span, five unannounced trauma center surveys were conducted."

There currently exists a state-wide trauma registry. All trauma centers, according to the "Memorandum of Understanding," must participate. This trauma registry is computerized and provides MIEMSS, as collector of this data, with biographical and medical information regarding each patient brought to the trauma centers as trauma victims. The definition of "trauma" victims was provided by MIEMSS in its "Echelons of Care" and in its trauma protocols. There are financial incentives for these facilities to participate in the trauma registry. State Medicaid funds for trauma patients are available only if a patient is entered into the State Trauma Registry.

This trauma registry provides MIEMSS with a retrospective mechanism for quality assurance. The State EMS director, based on the information from the trauma registry, stated that he does have conversations with the physicians at the various trauma centers regarding the care of trauma patients. However, within the text of a "Memorandum of Understanding" agreement it states, "that it is not the purpose of this Memorandum of Understanding that MIEMSS supervise the hospital in its performance of patient care services."

There appears to be an informal network that exists among health care providers throughout the state including EMS personnel, nurses and physicians. Per Dr. Ramzy, these health care providers have informally reported to him their observations of apparent deficiencies in the medical care given to "their" traumatized patients by the medical profession.

R Adams Cowley, M.D., appears to be the driving force behind the Maryland EMS system from its onset twenty-five years ago. Although we did not meet the man, the results of his work are apparent in the well-organized system that now exists. From all reports he was, and still is, the catalyst for the legislation that initially created MIEMSS. His apparent political skills have insured continued state funds for both MIEMSS and the state-wide EMS system.

Maryland's Trauma System is responsive to community needs as demonstrated by the recent addition of Southern Maryland Hospital Center as the tenth area-wide Trauma Center in the state-wide EMS system. This area is a rapidly developing bedroom community of Washington, D.C. Although it is unclear whether the local citizens or the state EMS personnel were the first to become aware of the variant morbidity and mortality statistics, once the need for an area-wide trauma center in this community was recognized, the Regional Advisory Council initiated a search for a community hospital that was willing to assume that role. Its selection was then recommended to MIEMSS for approval. Apparently, there was no competition among the local hospitals and the designation was eventually given to the Southern Maryland Hospital Center in Clinton.

The only example provided to the task force of hospitals competing for the area-wide trauma center designation was in the Cumberland region of western Maryland. The hospital finally selected was chosen because it could provide local residents with more comprehensive neurosurgical services.

The daily management of the state-wide EMS system ultimately rests with the state EMS director, Dr. Ramzy. On a day-to-day basis, his involvement is primarily with the triage of severely traumatized individuals to the appropriate facility ("the right patient to the right facility . . . match the injury to the facility within the right period of time"). Dr. Ramzy would become involved when one of the area-wide or university trauma centers is on a "Condition Red."

All of the trauma centers are allowed to go on a "Condition Red" situation, i.e., temporarily closed to new trauma admissions. The time frame for this "Condition Red" condition varies according to the location of the hospital and local needs. Suburban Hospital in Montgomery County was allowed by its local EMS system to go on "Condition Red" only four hours at a time and no more than eight hours within a twenty-four hour period. Johns Hopkins Hospital in Baltimore City, a university trauma center, has been on "flyby" for several months and will not accept general adult trauma patients referred from another facility. However, the hospital remains open for pediatric trauma and other acute trauma from the immediate neighborhood. This condition is tolerated, according to Dr. Ramzy, because there are other trauma centers in Baltimore which can fulfill the needs of the local population.

When a facility like Peninsula General Hospital Medical Center in Salisbury goes on "Condition Red," Dr. Ramzy immediately contacts the hospital to offer assistance. This area-wide trauma center provides coverage for a large number of communities on the east coast of Maryland and is the only trauma facility in that immediate area. The Shock Trauma Unit at MIEMSS has periodically gone on "Condition Red" when they are incapable of handling any additional trauma patients. Patients are then diverted to other trauma centers.

Dr. Ramzy, as State EMS Director, is notified daily through the state-wide communications system (SYSCOM) of the status of all facilities participating in the state trauma network. There is a perception that the trauma network is a team. This positive perception facilitates inter-hospital transfers. There appears to be no concern about "dumping" patients as there are no non-paying patients in the system and there seems to be no hoarding of paying patients within the trauma network.

Individual area-wide and university trauma centers including MIEMSS do not receive any state funds for the care of traumatized patients. However, there are financial perks that make it easier for

these institutions to handle traumatized patients. The State of Maryland does not have a DRG system, however, there is a strong PRO presence. Trauma patients, although covered under the auspices of the PRO system, appear to be mostly exempt from the severe scrutiny of the PRO reviewers. Additionally, there is a liberal recovery system with easy access to State Medicaid funds. Individuals who are in the State of Maryland for at least one week, including hospitalized patients, are capable of receiving funds from the State Medicaid program.

Suburban Hospital in Montgomery County is an area-wide trauma center with 465 licensed beds and 283 beds in active use. This facility received its trauma center designation in 1976. They are currently seeing about 400 trauma patients each year. The hospital is located in an affluent community adjacent to the major highway system ("the beltway") around metropolitan Washington, D.C. As a result of its location, its "trauma" consists mostly of blunt trauma resulting from motor vehicular accidents. The State of Maryland enforces a stringent program requiring auto insurance for all drivers.

Although the trauma centers are probably not making money from the direct care of trauma patients, they do perceive benefits in other ways. Besides the additional volume of "spin off" patients who want to be serviced at the "trauma hospital," the facility obtains advertising that it could not have purchased otherwise. Suburban Hospital has recently taken a full-page advertisement in the Washington Post emphasizing its role in the State trauma system. MIEMSS is routinely mentioned on the television news reports whenever a patient is brought to that facility.

MIEMSS, as previously mentioned, performs several roles in the care of traumatized patients. As a state agency, it receives funds from the State for the management of the State EMS system and the State Communications Network. The Director and the Assistant Director of MIEMSS also receive salaries from the State.

The Shock Trauma Unit at MIEMSS does not receive any funds directly from the State for patient care. However, it does receive from the State approximately two to three million dollars each year with a portion used to off-set bad debts. As with the other trauma facilities in the state, it is capable of receiving monies through the State Medicaid program for its patients' care.

The State of Maryland has approved approximately thirty-one million dollars over the past five years for the construction of a new eight-story building with 138-bed capacity to house the Shock Trauma Unit and the institute's various administrative and clinical support services. Additional funds in the form of grants have been obtained for MIEMSS from the federal government for medically related studies.

Dr. Ramzy estimated that 12% of the patients at the Shock Trauma Unit are responsible for 60% of the operating funds of that unit. Inter-facility transfers are communicated through the state-wide communications system (SYSCOM) available at each of the area-wide trauma centers, the University Trauma Centers, the specialty referral centers, and MIEMSS. Transfer protocols were initially established by MIEMSS. Currently, problematic patient transfers and transfer protocol are reviewed quarterly at the "Network" meetings. The responsibility for these transfers rests with the transferring physician(s) and the receiving facility physician(s). This transfer is coordinated through the State communications center, "SYSCOM," when the transfer is being facilitated by helicopter, or when a specialty consultation is needed.

The "Echelons of Trauma Care" state that participating facilities in the trauma network must establish a Trauma Service. This Trauma Service must "accept final clinical responsibility for patients admitted to the Trauma Service." This group of surgeons must include "general surgeons and thoracic surgeons." At the area-wide trauma center we visited, Suburban Hospital, the relationship

between the Trauma Service and the hospital administration appeared to be strong and supportive. The administration reserves the right of final approval for putting the hospital on "Condition Red."

There is a Director of Trauma, Dr. Hanowell, who stated that his reason for participation in the Trauma Service was his personal interest in managing these "sometimes difficult medical cases." There was no evidence of any financial arrangement between the hospital and the physicians providing coverage on the trauma service. These surgeons are private practitioners.

Dr. Hanowell estimated that he pays approximately twenty-four thousand dollars per year for malpractice insurance. Insurance is obtained through the state medical society. There is an additional fee that is optionally required from physicians who provide trauma care. The duties of the trauma director are his/her responsibility for scheduling and assuring that there is continuous coverage for all trauma patients.

As per the "Echelons of Trauma Care" participating facilities shall designate a trauma nurse coordinator. This trauma nurse coordinator shall "assist the director of the trauma service in facilitating trauma care by coordinating with the various hospital services involved in the total care of the trauma patient." At Suburban Hospital there was no noticeable effect on the hospital bylaws other than the initial creation of the Trauma Service. There does not appear to exist at this facility any problems with obtaining physician, surgical or surgical sub-specialty coverage for the Trauma Service.

The "Echelons of Trauma Care," which is part of the contractual agreement between MIEMSS and participating hospitals, specifies the relationship between the hospital facility and the medical personnel, both physician and nurse. This document stipulates both the physical plant and the personnel requirements for any hospital

that serves as a trauma center. These requirements appear to have been created with some flexibility in order to facilitate a hospital's involvement in the trauma network. For example, Suburban Hospital has neither an obstetrical nor a pediatric service. However, "the hospital's trauma policies indicate that any trauma patient who is pregnant will be seen promptly by an obstetrician."

The staffing of the Trauma Service with regard to the availability of surgeons and surgical sub-specialties as well as ancillary services such as radiology and laboratory capabilities are enumerated in "Echelons of Trauma Care." The number of nurses required to manage a trauma victim is also specified.

For the most part, trauma centers appear to interact well with the surrounding area hospitals. There appears to be some competition for patients among local hospitals. At Suburban Hospital this appears mostly to consist of vying for the favors of the eighteen county ambulance services which provide the EMS coverage for Montgomery County. This favoritism does not appear to hold true for trauma patients which are brought to the trauma center per the published protocols.

In conclusion, the State of Maryland EMS system under the guidance of R Adams Cowley, M.D., and MIEMSS is a very sophisticated operation but not without its problems. The system has an excellent rapport with the media and enjoys the public perception that it is the best system around. The "problems" that surfaced during our site visit are relatively minor. The bottom line is that patients do get excellent medical care and the participants do actively appear to pay attention to the dictum of "the right patient to the right facility within the right period of time." The perception of the State EMS Director, Dr. Ramzy, is that the percentage of preventable deaths is less than five percent in the state and probably closer to one or two percent. These figures are much lower than any published in any previous studies involving other systems. The people at MIEMSS do not have any hard data at this time to support these claims.

These guidelines are very general as written but seem to be applied appropriately by the EMS health care providers. The American College of Surgeons criteria for designation of trauma centers is not utilized in Maryland. They have the advantage of being in existence prior to the publishing of the ACS criteria. The criteria used by the State of Maryland EMS system have been adapted to local needs and resources.

PRE-HOSPITAL CARE/AIR AMBULANCE ISSUES

Maryland Institute For Emergency Medical Services Systems (MIEMSS)

It is impossible to begin a discussion of trauma systems in the State of Maryland without defining MIEMSS. In 1961 the Army provided a grant to support a two-bed clinical research unit under the direction of Dr. R Adams Cowley, then chairman of the Department of Thoracic and Cardiovascular Surgery at the University of Maryland. This was the first "shock trauma unit."

The highest "Echelon of Care" is the MIEMSS Shock Trauma Center located at the University of Maryland in Baltimore, Md. This center is supported by ten additional area-wide trauma centers and nineteen specialty referral centers. Each area-wide center operates under a MEMORANDUM OF UNDERSTANDING with MIEMSS and follows protocols developed by MIEMSS. MIEMSS is charged with the responsibility of coordinating the five EMS Regions within the state, coordinating training of all EMS personnel within the state, developing standards for certification, and administering state and federal funds pertaining to EMS in Maryland.

Pre-Hospital Providers

Ambulance service in Maryland's twenty-three counties and in Baltimore City is provided by local fire departments and rescue squads. When a patient requires a higher "echelon of care" than available from an area hospital, the patient is transported to the nearest appropriate trauma center or specialty referral center for treatment. There seemed little reticence on the part of hospitals to accept these patients regardless of ability to pay since a very aggressive Medicaid program complements Medicare and other third-party reimbursement to insure payment on a high percentage of hospital charges. There is virtually no refusal to accept these patients because of the available reimbursement programs. In the case of trauma, only "designated" trauma centers are eligible for reimbursement, therefore other hospitals are not interested in competing for this business.

If ground transport time is estimated to be more than 15 minutes, a helicopter is requested from the Maryland State Police Aviation Division to provide high-speed Med-Evac services. The State Police fly more than 3,000 Med-Evac missions per year with twelve Bell Jet Rangers located at seven strategic locations throughout the state. The helicopters are dispatched by Systems Communications (SYSCOM) located at the Shock Trauma Center. Med-Evac missions take priority over all other requests for the helicopter, including law enforcement. Each helicopter is staffed by one pilot and one police paramedic. While each helicopter is capable of transporting two patients, one helicopter crew expressed a reluctance to simultaneously transport two patients because the relatively small size of the current helicopter makes in-flight patient management more difficult. Future plans include upgrading to a larger helicopter but crew size will remain the same. Other agencies are sometimes employed to transport patients when response by the State Police is longer than desired. State Police Med-Evac service is tax supported while private companies charge a user fee.

Pre-hospital emergency medical service is provided by both career and volunteer organizations. The majority of career personnel are found in the busier areas, however, it was stated by EMS personnel in Chevy Chase, MD., that 70% of Maryland ambulance personnel were volunteers. The three levels of certification are Emergency Medical technician (EMT), Cardiac Rescue Technician (CRT), and EMT-Paramedic. Training for these levels of certification range from approximately 100 hours for the EMT to a total of 400 hours for the EMT-Paramedic. Recently, local community colleges have been included in the training process. It was emphasized that all control concerning curriculum and course content is governed by MIEMSS.

MIEMSS reports that Maryland has approximately 350 ambulances state-wide. Most vehicles respond with a two-man crew consisting of at least one CRT or one EMT-Paramedic. If additional manpower is required, back-up response is provided by other fire service crews (engine, ladder, etc.) or a paramedic supervisor in a field unit. This varies from system to system, but it appears to provide sufficient manpower in all instances. Historically, there has been no charge for pre-hospital emergency medical service, however, some communities have recently instituted a charge for ALS treatment. The Pre-Hospital Group did not visit a system that charges for its service. Members of the Bethesda-Chevy Chase Volunteer Rescue Squad informed this committee that the majority of their operating budget was provided through various community fund-raising activities conducted by members of their organization. Funding for all programs related to training has come from various continuing state grants administered through MIEMSS.

Trauma Systems

The entire state of Maryland operates under one set of protocols entitled, The Maryland Protocols for Cardiac Rescue Technicians and Emergency Medical Technicians-Paramedics. Although a mechanism for exception to these protocols exists, they are universally

considered the "bible" for Maryland technicians. The protocols are developed with input from the five EMS regions with final approval by the state medical director for EMS field operations. It is important to note that triage criteria are not included in the protocols. The philosophy of MIEMSS is that the field paramedic must make the decision as to the appropriate facility for transport. Paramedics will utilize mechanism of injury and multi-system injury as a primary determinant for trauma system entry and no grading scales are utilized to dictate patient destination. MIEMSS feels that its data indicates that field paramedics make the appropriate decision and no external "scales or scores" are needed.

SYSTEM EVALUATION AND QUALITY ASSURANCE ISSUES

A state-wide trauma registry is used by all trauma centers. The registry is manually compiled at the trauma center, entered on a personal computer, and up-loaded to MIEMSS. However, there does not appear to be any system-wide quality assurance program based on registry data; rather, this is accomplished on a facility-by-facility basis. Traditional morbidity and mortality (M&M) case reviews are used to review the quality of patient care delivered.

The state's trauma registry has been evolving for quite a few years. MIEMSS sponsors a Trauma Center Network -- comprised of a trauma nurse, physician, and administrator from each trauma center -- which has provided practical user input into the development of the registry. Registry data is up-loaded to MIEMSS, which currently does not provide users with any aggregate or facility specific analysis beyond the statistical reports programmed into MICROSTAT (a commercially available software program).

One weakness in the registry system noted by MIEMSS staff was that non-trauma hospitals were not required to participate even in a limited fashion. This weakness makes it necessary for MIEMSS staff to consult externally generated and less reliable data bases for morbidity and mortality data. These external data bases include medical examiners' reports and hospital discharge reports.

MIEMSS does not conduct preventable death studies, though these are "on the drawing board." Quality assurance efforts rely heavily on individual facility and local EMS system initiatives. MIEMSS' involvement in pre-hospital patient care quality assurance programs seems to be limited to mediating patient care disputes arising from the field and conducting comparative studies of death statistics available from external data bases.

Quality assurance is an individual hospital matter, most commonly monitored through mortality and morbidity conferences. Trauma registry information has been obtained since the spring and is sent to MIEMSS, but quality assurance review within an individual facility is the responsibility of the individual facility.

Good pre-hospital guidelines for patient triage do not exist. Paramedics are "encouraged" to over-triage rather than under-triage. While the mechanism of injury criteria is most commonly used, paramedics are "courted" by hospitals and criticism of pre-hospital care is muted because the EMS system has wide latitude in transporting patients.

State-derived protocols for EMS activity are locally tailored. Trauma scoring systems are "not found to be effective" and are not used. Paramedics go by "gut" feeling.

While this EMS-run data goes to MIEMSS, no data is available on the percentage of under- or over-triage to emergency facilities.

Each county EMS has a medical director, but the medical director comes from the general community and is not necessarily on the staff of the regional trauma center. This was the case at Montgomery County's Suburban Hospital.

The area-wide trauma centers appear to have little, if any, systematic quality assurance programs for providing feedback to pre-hospital providers. MIEMSS does collect, in a generally uniform manner, ambulance-run report information on every call made by a pre-hospital provider in Maryland. MIEMSS is able to review this information and provide feedback to pre-hospital providers through a system of regional and local medical directors. These medical directors meet quarterly during meetings of the Trauma Center staff morbidity and mortality case reviews.

The Maryland system has a number of features that would appear to foster a sound system-wide quality assurance program, but the evidence of this is largely anecdotal.

The trauma system in the State of Maryland comes under the jurisdiction of MIEMSS. Individual regional trauma centers have a franchise from the state as a state agency. This allows them to qualify for Medicaid dollars on individual trauma patients while other hospitals do not qualify. Retroactive Medicaid designation for any under-compensated trauma patient logged into the registry is an incentive for compliance with the trauma registry.

The current trauma registry format for the State has been in place since July 1987. It utilizes an IBM PC-AT computer; software costs \$5,000.00 and there is no monthly fee. Reports to the individual institutions are monthly; but as yet no case-related decisions have been based on this data. Hard data has been used to help determine staffing needs. Prior to this summer, data from MIEMSS was obtained only upon request and was limited.

At the Shock Trauma Unit, there are two competing trauma registries. One registry is very extensive and is used only on patients admitted to the Shock Trauma facility in Baltimore. It is stated that this registry is rather lengthy and primarily clinical in nature. The second registry is the state-wide registry distributed to the regional trauma centers. These two registries do not appear to be coordinated or complementary. In addition, there has been separate data collection for review of preventable deaths. This lack of coordination hampers effectiveness.

Little information is quantitatively obtained at the Shock Trauma Unit in Baltimore that reflects on quality assurance matters at that facility. Indeed, there seems to be a disdain for self-analysis in quality assurance review. There appears to be a general impression that MIEMSS was providing the best possible care and that efforts at obtaining data were not for quality assurance but rather for

political and legislative efforts to obtain further allocation and funding.

**UNCOMPENSATED CARE, TORT CLAIM LIABILITY
AND
MALPRACTICE INSURANCE ISSUES**

Uncompensated Care

Uncompensated care is a potential and actual problem for physicians and hospitals in four of the eleven trauma centers due to a large number of self-pay patients.

Shock Trauma payor mix reported was:

6% Medicare	54% Commercial
20% Medicaid	20% Self-Pay

Maryland, a rate regulated state, has only one category of patients which could result in bad debt, i.e., self-pay. Currently bad debt is running approximately 25% at the trauma centers and 14% at Shock Trauma (approximately 2 million dollars annually). The Shock Trauma Unit is the only trauma facility reimbursed by the state for bad debt, which amounts to \$3 million annually.

MIEMSS has provided a Professional Association (P.A.) in which all physicians associated with trauma are members. Billing consists of one overall statement, from all physicians associated with each case, sent to the third party carrier. This has resulted in maximizing both billing and collections and pooling the risk for all members of the group. The Shock Trauma Unit averages a 60% physician collection rate.

The consensus at MIEMSS was that if hospitals were properly reimbursed for trauma care, they could individually structure a mechanism to compensate their doctors for services rendered.

To ensure maximum insurance coverage for vehicular accidents, the state enforces the requirement for mandatory automobile insurance with a loss of tag if insurance is discontinued.

Chronic Care (Rehabilitative Care) was considered a problem at all trauma centers and the consensus was that passage of catastrophic care funding could solve this problem. A senior representative of MIEMSS stated that nationwide, the greatest threats to trauma systems were the failure to reimburse the health care providers for the care of trauma patients and the lack of facilities for rehabilitation.

Malpractice

It would appear from available data that malpractice claims arising from trauma, at the present time, do not contribute significantly to the total number of malpractice claims in Maryland. Suburban Hospital reported two malpractice claims in five years with a 1986 reported volume of 400 cases. The Shock Trauma Unit reported four cases in two years with a 1986 reported volume of 2,500 cases.

Due to an increase in malpractice premiums of approximately 40% in the last two years, a voluntary insurance pool through the Maryland Medical Association was established. Shock Trauma elected to self-insure its physicians for \$3 million per claim and \$5 million aggregate. Representative premiums for surgical specialists at The Shock Trauma Unit were reported to be:

Trauma Surgeon	\$30,000 - \$35,000
Neurosurgeon	\$50,000
Orthopedics	\$45,000

The Administration of Suburban Hospital stated that some physicians have refused to take trauma calls due to increased premiums. However, a physician interviewed at Suburban was not

aware of any physician who refused to take trauma calls due to malpractice issues. It should be noted that Suburban Hospital has the least number of self-pay patients and a low volume of trauma cases (400 cases in 1986)

It was noted that since Shock Trauma serves as the referral center for all neurological and spinal injuries, trauma center hospitals and physicians have shifted some of these high risk patients to Shock Trauma. The general public perception of the standard of care is that "if you had a bad outcome at Shock Trauma or one of the trauma centers, nothing further could have been done for you." This perception may have contributed to the limited number of reported claims.

Maryland has attempted to limit the malpractice exposure claims and insurance premiums through a Tort Reform and Quality Assurance/Risk Management mechanism:

Tort Reform

A mandatory Health Claims Arbitration board has been set up to pre-screen all cases prior to going to trial. While this board is mandatory, its decisions are non-binding. This Board consists of one lawyer who acts as the judge, one health team member and one lay person. The overall evaluation of this Board was that while it slows down the procedures, it also eliminates some of the frivolous lawsuits. A cap of \$300,000 exists for all pain and suffering awards.

Quality Assurance/Risk Management

The Department of Professional Regulations for physicians is a Committee of medical discipline which investigates all malpractice cases brought against physicians. These investigations are not discoverable and the committee has the authority to rescind or suspend a physician's license. All Risk Management activities and Quality Assurance committees reports are not legally discoverable.

The Shock Trauma Unit has also attempted to limit its exposure to malpractice claims by maintaining a high standard of medical care and by having all members of the trauma team actively participate in a strong Risk Management/Quality Assurance program. This program which includes a family service program to identify and defuse potential high risk cases.

5.3 SITE VISIT RICHMOND, VIRGINIA

INTRODUCTION - VIRGINIA

Virginia is located in the Middle-Atlantic area of the east coast. It has a mountain and valley region in the west, a rolling piedmont plateau, and coastal plains in the east. A portion of Virginia on the eastern shore is separated from the rest of the state by the Chesapeake Bay. The total land area of 40,817 square miles supports a population of 5,787,000 million persons with an average population density of 144 per square mile. Sixty-six percent of the state's population lives in an urban environment. Virginia ranks 13th in population and 36th in total land area of all the states.

Of the total population 79% are White, 19% are Black. Approximately 2% are Hispanic. Virginia has experienced a net increase in population of 8.2% in the last six years. Per capita income is \$15,374 and unemployment is 5%.

As in Maryland, Virginia is an extremely active political center. Over 52,000 miles of interstate, primary and secondary roads, and all major highways in the "Northeast Corridor" pass through the state.

TRAUMA SYSTEMS ISSUES

Virginia has a well-developed health care system with five tertiary care centers located strategically in different areas of the state. These tertiary care centers played an integral part in setting up the Trauma System for the State of Virginia. It was recognized that these hospitals would most likely qualify as the Level I trauma centers for the state even though the number was not limited.

Qualifications for trauma designation were predicated upon the hospital meeting the American College of Surgeons Standards. The hospital submitted an application for designation to the State of Virginia EMS office. An application fee of \$1,950 for a Level I trauma center and correspondingly less for Level II and III centers was required with all applications.

Initially, ten hospitals sought a Level I designation, however, only five hospitals qualified and were granted Level I designation. There were six hospitals designated as Level II Trauma Centers, and two designated as Level III Trauma Centers. The Level II Centers were reduced to five due to problems with a hospital's inability to meet the criteria. Once an application was submitted, a Trauma Committee Site Review Team conducted a site visit to determine the hospital's compliance with the standards. Level I Trauma Centers were visited first and given a designation, followed by Level II and then by Level III. Two years after initial designation, a verification visit is made to ensure continued compliance with the standards. A verification visit may be made at any time the State Health Commissioner requests one. A hospital may request participation in the Trauma System at any time provided that criteria for application are met. Several hospitals are in the process of seeking designation.

The State EMS Advisory Board takes a very active role in the entire Trauma System for the State of Virginia. The State Board of Health has the regulatory authority for the entire Trauma System, and it regulates the activities of the EMS Advisory Board. The chairman of the EMS Advisory Board is a physician who serves in an unpaid volunteer status. There are eight regional councils each of which is chaired by a regional medical director. The regional councils, which cross county boundaries, meet quarterly with voluntary membership. The purpose of the council is to promote standards of care for all counties and to insure that participation in the Trauma System is appropriate. Although the council has no regulatory authority for the Trauma System, it makes recommendations to the State Health Commission.

The State of Virginia has adopted the American College of Surgeons criteria for defining hospital standards. These criteria require that each hospital have a trauma service with a physician in charge, and that key hospital and medical staff should be the "Core Trauma Group". A trauma nurse coordinator is recommended. The Emergency Department physician must be a recognized member of the trauma service and Trauma Committee. Additional criteria included surgical specialties, transfer agreements, and a quality assurance program. The one hospital visited which is remaining in the system, the Medical College of Virginia, did meet the above criteria.

The Medical College of Virginia has a trauma service headed by a medical director who reports to the Department of Surgery and is paid by the State. Personnel are designated as part of this service including a Unit Coordinator, Head Nurse, Nurse Clinician and Certified Emergency Department Nursing personnel.

Each hospital has responsibility for day-to-day management of the system provided that the Department of Health guidelines are followed. These hospitals participate on a local council which enhances the activities of the regional and state-wide councils. Since there are no formal triage guidelines established, pre-hospital personnel direct the patient to the closest, most appropriate facility for treatment. All trauma centers are required to have written transfer agreements between facilities to insure adequate understanding between referring and receiving hospitals.

Triage protocols and transport regulations were virtually non-existent. The combination of voluntary, municipal, and commercial ambulance services presented increased concerns regarding the quality of pre-hospital care. A Medical Control Committee determined the qualifications of the EMS personnel.

There are different certification levels for the pre-hospital personnel. The majority of paramedic training for Richmond is conducted by the Medical College of Virginia (Medical College of Virginia). Basic Life Support is a minimal requirement for the pre-hospital personnel.

Of the three hospitals visited in Richmond, only Medical College of Virginia remained in the trauma system. It was a Level I facility which appeared to be adequately meeting the needs of patients requiring Level I emergency services. The other two hospitals, Chippenham and Richmond Memorial, had withdrawn due to financial problems and lack of trauma patients directed to the facility. The location of this hospital was in close proximity to the Level I facility and the majority of the patients were transported to the Level I hospital. This Level II hospital had incurred additional expenses in implementing the Trauma System and could not justify the cost for remaining in the system with a minimal number of trauma patients. The Level I trauma facility had a trauma service prior to the implementation of the state-wide trauma system. It had not made any changes in its internal operations with the onset of the

state-wide system. This hospital was fully equipped with a wide range of services for trauma patients and did not verbalize any pressing concerns regarding the Trauma System.

Legislation regarding liability immunity and reimbursement is being addressed at the State level. The Level I facility (and all State hospitals) presently receive some state appropriations for the indigent care provided. Overall, despite the reimbursement and malpractice concerns, the Richmond Trauma System appeared to be operating effectively.

PRE-HOSPITAL CARE/AIR AMBULANCE SYSTEMS ISSUES

The State EMS office in Virginia has a very structured system which allows for local, regional, and state control of the EMS system while still providing standardization and consistency throughout the state. Eight EMS regions govern EMS delivery and are managed by a Regional Director who reports to the State EMS Director. The city of Richmond is a member of the Old Dominion EMS Alliance on a regional level. The Metropolitan Richmond EMS Council is the local control for Richmond, Virginia.

Pre-Hospital Providers -- Ground

Ambulance service in Virginia is provided by public, private, and volunteer providers. In certain areas, service is provided by a combination of providers using one-tier or two-tier systems. The two-tier system incorporated a primary government agency response with transport by a private provider. Metropolitan Richmond is served by three private and three public providers who contribute vehicles and manpower to the total system. Each agency is responsible for one advanced life support and one basic life support unit as part of the City system. The private provider operates under contract with the city and is paid an annual subsidy for its services. The current charge for ambulance service is approximately \$100 for an Advanced Life Support call and \$75 for a Basic Life Support call according to the City of Richmond EMS Director. The call volume of this system is approximately 26,000 responses per year. A central dispatch center operated by the City of Richmond requests ambulance response from the appropriate provider and units are dispatched by the responding agency. The EMS Director noted that there are instances with the volunteer agencies when an Advanced Life Support response vehicle is not available and Basic Life Support response may be necessary. This information status is determined by a daily roll call to establish system condition. An average response

time of 5 to 6 minutes is required. The stated goal of the city system is to upgrade to an all Advanced Life Support system with 12 units. A modified priority dispatch system is utilized; however, no patients are triaged out of the system by dispatch according to instructions from risk management personnel and advisory board members.

Response units are staffed by trained personnel as designated by the State of Virginia. Most units are staffed with two technicians who are trained to the level of service being provided. A Basic Life Support unit must be staffed by one operator who is trained in emergency vehicle operation and an "attendant-in-charge" who must be a state certified Emergency Medical Technician (EMT). An Advanced Life Support response vehicle must be staffed by an operator and an attendant-in-charge who must be certified as an EMT-Cardiac or EMT-Paramedic. The EMT-Paramedic certification is administered through the National Registry. An additional certification is the EMT-Shock/Trauma Technician. The training programs for the various certifications are regulated by the State EMS office, and training is provided by various public and private training institutions. The paramedic certification program is taught at the Medical College of Virginia and is completely free to all program participants. The course is taught over a two-year period and requires 732 hours for completion. A pre-requisite for admission is the EMT certificate. Currently there are slightly over 200 EMT-Paramedics in Virginia. Instructors in all EMT and Paramedic programs must be state certified.

Pre-Hospital Providers - Air

According to the State Med-Evac Ad Hoc Committee Report of November, 1986, the following helicopter services are in operation in Virginia:

1. Aries - Fairfax County Police
2. Life-Guard - Roanoke Memorial Hospital
3. Med Flight - Virginia State, Chesterfield
4. Med Flight II - Virginia State, Bristol
5. MedStar - U.S. Jet, Washington Hospital
6. Nightingale - Norfolk General Hospital
7. Pegasus - University of Virginia Hospitals
8. U.S. Park Service - U.S. Parks in Virginia

Each of these companies provide service from the scene to the hospital and 90 to 100% of the scene calls are flown within a 60-mile radius of the unit's base. Licensing and regulation of each helicopter program is by the State of Virginia for EMS operations and the FAA for aircraft operation. Specific cost data for these operations were unavailable; however, the State Med-Evac Ad Hoc Committee stated in its November 1986 report that the typical contractor-based helicopter service will cost \$1-1.5 million per year with hospital-based systems operating slightly less expensively at \$850,000 to 1.2 million per year. The committee further reported that 35 to 50 percent of the cost of operating the helicopter system would be made up from flight charge revenue. Third-party reimbursement for helicopter transport in Virginia is inconsistent or non-existent depending upon the source. Individual operators have been successful in negotiating levels of reimbursement which in most all cases are significantly below cost. Interstate coordination, response coordination, and scene management were identified as areas of concern and goals have been established for improvement in the future.

Trauma System

The pre-hospital community supports the Trauma System concept in Virginia; however, flexibility is not only necessary but evident in the review of this system. The majority of trauma patients receive the proper response and are transported to a trauma center. The exception to the rule occurred most frequently in rural areas where stabilization in a community hospital was sometimes practiced. The study group did not visit any such area. The trauma centers are designated as Level I, Level II, or Level III, and pre-hospital personnel seemed aware of the appropriate facility in a given case. Although general direction for protocols is given through the Advisory Council, individual departments and agencies retain some autonomy through their medical directors to determine treatment, drugs, and procedures. The same is true of triage guidelines for trauma patients. Discretion for designation of a trauma patient is left up to the on-scene technician. The Regional Director of the Old Dominion EMS Alliance stated that the result was over-triage to Level I trauma centers.

Hospitals were generally satisfied with pre-hospital care and felt that agencies in their catchment areas transported to the appropriate facility. One hospital administrator stated, however, that four hospitals had formed a joint venture for inter-hospital transportation of patients among their facilities.

Summary

The strong point of the Virginia EMS System and Trauma System in particular, appeared to be state involvement and direction in the delivery of Emergency Medical Services. The "hierarchy" of EMS begins with a strong State Director, a thirty-seven-member State EMS Advisory Board, six task forces, and eight regional councils. Regional councils which have a large membership are further subdivided into local councils. This network of EMS professionals appear to work together in a spirit of cooperation and

communication resulting in a relatively integrated and effective system. A measure of the effectiveness of this agency was the passage of state legislation on July 1, 1987, mandating statewide compliance with the Trauma Registry Law.

With reference to the Richmond area, the "EMS Director" was a one-person office and this program appeared to be in transition to a more comprehensive system design.

SYSTEM EVALUATION AND QUALITY ASSURANCE ISSUES

Hospitals within the Richmond, Virginia, area may apply for designation as a trauma center through the State Emergency Medical Services Office.

During 1987 the General Assembly passed House Bill #1633 which addresses a mandatory Virginia State-wide Trauma Registry participation by all hospitals within the State. The purpose of the trauma registry is to identify the traumatized patient in the State of Virginia. The registry included all those patients with an ICD-9-CM code between 800 and 959.9. The trauma registry formulated a minimum data set for each hospital to complete. All hospitals participate in the registry not just trauma centers. Typically, the pre-hospital report is completed by pre-hospital personnel while the in-hospital data is compiled by the medical records department. No registry report is required on patients discharged directly from an emergency department regardless of mechanism of injury or any other factor. The State EMS office is readily able to match up run reports and registries, thus providing the State with a substantial ability to assess patient care and conduct comparative analyses of systems. Trauma registry data is confidential, but discoverable - - a potential problem in some states, but apparently not an issue in Virginia. Prior to the trauma registry being mandatory, approximately 75% of Virginia's hospitals were participating voluntarily in the state's trauma registry.

Data entry is done at a central location in the EMS Department. Each institution is able to receive information feedback upon request. The institutions visited had not requested such information, thus part of the trauma registry goes without validation.

There appears to be no systematic approach to quality assurance between pre-hospital providers and hospitals in Virginia. Critiques of pre-hospital medical care were done infrequently, if at all.

Virginia has a regional medical direction program, but regional medical directors are volunteers and not all services are required to have a medical director. Problem cases sometimes are referred to local or regional medical directors. Personnel competency issues may be referred to the State EMS office for review and possible administrative action.

A financial disincentive for hospital staff to criticize pre-hospital providers may be that each pre-hospital care provider has considerable discretion in deciding where to transport patients.

Each hospital conducts an internal quality assurance program via the traditional trauma rounds and mortality and morbidity (M&M) conferences.

Neither postmortem nor autopsy studies are required routinely in Virginia. Only "suspicious" deaths must be reported to the medical examiner who has the option of signing the death certificate without autopsy. "Non-suspicious" deaths are handled by hospital physicians. Hospitals conduct standard morbidity and mortality (M&M) reviews, but do not conduct detailed death studies. The new integrated state-wide pre-hospital run report and trauma registry should provide the basic data essential for identifying where specific mortality studies, system reviews, or both -- are needed. A requirement for mandatory medical examiner review of all trauma deaths would greatly enhance the depth of the state's quality assurance program.

**UNCOMPENSATED CARE, TORT CLAIM LIABILITY,
AND
MALPRACTICE INSURANCE ISSUES**

Introduction

This report will deal with the primary question of the impact of funding, and the real or perceived threat of a volatile insurance system and/or the effectiveness of tort reform on Trauma Service.

Richmond, Virginia, provided the unique opportunity to review a trauma system with one trauma hospital that had varied levels of legislative support and community hospital interaction. The three hospitals visited were:

<u>HOSPITAL</u>	<u>TRAUMA DESIGNATION</u>	<u>BED SIZE</u>	<u>OCCUPANCY</u>	<u>E.R. VISITS</u>
Richmond Mem	none	400	78%	33,000
Chippenham	none	477	76%	38,000
Medical College Virginia	Level 1 100,000	1058	80%	

Payor mix in these hospitals was as follows:

<u>PAYOR GROUP</u>	<u>RICHMOND</u> <u>MEM</u>	<u>CHIPPENHAM</u>	<u>MEDICAL COL.</u> <u>OF VIRGINIA</u>
Medicare	55%	55%	25%
Medicaid	4%	10%	10%
Commercial	20%	22%	35%
Self-Pay *	26%	3-4%	25%
Other **	?	9%	5%

* Includes indigent patients

** HMO, Government, etc.

The above referenced hospitals participate in a health delivery system, to include trauma care, that service a population of roughly 2.7 million persons living in a 14,000 square mile area.

Chippenham and Richmond (and other non-designated community hospitals) receive/treat patients which significantly reduces a potentially burdensome trauma volume on the Medical College of Virginia (Medical College of Virginia). It was reported that Medical College of Virginia experiences approximately 1,300 trauma visits yearly with 3 - 4 surgical cases daily. A similar volume of surgical cases was also quoted by Richmond and Chippeham. It was also reported that a significant change in payor mix was not recorded because of any involvement in trauma services.

Uncompensated Care

State funding for indigent care was provided to the three Level I Trauma Centers located in the state. These facilities received adequate funding such that they were able to accept all patients (trauma or medical/surgical) referred to them as long as the patients were medically stable for transfer.

The fact that reimbursement was on a statewide basis was highly significant as there was no obstacle to inter-county transfers. The proportionate number of transfers for financial reasons was limited as compared to other states with significant differences in the level of indigency.

The current year's state subsidy to the Medical College of Virginia (Medical College of Virginia) is \$62 million. This amount figures into the hospital's operations budget including trauma care. There is also a state \$1.00 surcharge on automobile registration which is used by the state to support the county EMS grant.

It was reported by the authorities interviewed that trauma has not placed a financial burden on the Level I center nor the other hospitals unofficially participating in the system. One local hospital was actually receiving 70 cents on the dollar of trauma care. Richmond Memorial Hospital, although it reported an indigent care loss at \$3 million, did not attribute this amount to trauma care. Collection appeared not to be an issue in trauma management decisions.

Various hospitals chose not to pursue Level II designation because of the associated expense in maintaining certification in addition to the risk of increased uncompensated care. The medical staffs of the hospitals were split on their viewpoint. On the one hand, some physicians argued that they would lose both patients and critical care experience. Whereas other physicians feared the potential risk of poor reimbursement from an expanded pool of trauma patients. These physicians were already experiencing a sound practice, a full O.R. schedule, and thus preferred not to introduce any disruptions into their established life-style.

The patient population of Richmond, Virginia, was found to be of a good payor base with true indigents reported at 3%-5% and Medicaid at 4%-10% of the operating budgets of the hospitals visited. Given

that no one institution is called upon to carry the brunt of the non-paying or partial-paying segment of the community's poor, each institution is seemingly able to off-set its losses by other funding sources. It also appears that the trauma volume is so distributed that trauma care is able to function within the hospitals without overwhelming the other services' ability to meet hospital-wide needs, particularly at Medical College of Virginia, where Intensive Care Unit beds are readily available.

Compensation for automobile-related trauma is assisted in part by enforcement of the State Mandatory Automobile Insurance Laws which results in approximately 80% of the motorists being insured. Additionally, the uninsured motorists are required to contribute \$500 to an uninsured motorist pool which is collected at the time of vehicle registration or as determined by police spot checks.

The uniqueness of the Richmond, Virginia, system is the continued referral of trauma patients to non-designated hospitals. This practice is encouraged by Medical College of Virginia's liberal policy of accepting trauma patients in need of medical intervention beyond the capabilities of a receiving/transferring hospital. This open-door philosophy was voiced not only by the various administrators and physicians interviewed but confirmed by authorities at Medical College of Virginia. This appears not to be abused because hospitals will apparently absorb poor paying patients in exchange for the ability to lower their malpractice risk in transferring high risk cases to Medical College of Virginia, the Level I Center, which happens to be state funded.

Legislative actions to date have indirectly funded systems and facilities associated with trauma care, as well as mandated legislative reviews of indigent funding to include trauma services. These include:

- A. State funding of the state-sponsored institutions.
- B. Calling a State Legislative study of:
 - 1. Medicare/Medicaid funding of Trauma
 - 2. Patient Care Information System
- C. Directing Medicaid to perform internal studies of its reimbursement system.

Malpractice & Tort Reform

Mandated EMS review will reveal deficiencies in the pre-hospital triaging system with its medical/legal ramifications. The system is primarily a voluntary one that frequently led to the unavailability of suitable responding units. The training in a voluntary system differs where-in first responders may not be of a paramedic status. In many instances, this could lead to inadequate evaluation of patients, resulting in the triaging of patients with major trauma to non-designated hospitals. This further acts as a disincentive for hospitals, although qualified, to formalize their participation in a trauma network.

The question of malpractice claims and liability insurance, when asked as a possible deterrent to trauma care participation by either hospitals or physicians, was negated as an issue. It was reported that malpractice claims were negligible from trauma cases and showed no increasing trend. Richmond Memorial reported a hospital-wide claims history of roughly ten claims each year for the past ten years. Medical College of Virginia provided some statistics on malpractice claims in the central Virginia area which reflected a current rate of 8.0 and previous (3-5 years) rate of 9.3 of malpractice claim frequency per 100 physicians and a current rate

of 0.104 and previous (3-5 years) rate of 0.142 of malpractice claims frequency per 100 occupied beds.

Neither hospitals nor physicians were experiencing any threats of increasing liability premiums as the result of trauma. However, both hospitals and physicians have seen a trend toward increasing malpractice liability premiums. Richmond Memorial reported a steady incline in rates over the past few years from \$150,000 to a current \$500,000. Chippenham Hospital reported a 150% increase this year over last year's rates. It was further learned that physicians also received increases in liability rates ranging from 35% - 70% over the same time period.

Increasing rates were directed at specialty services, with Obstetrics, Anesthesiology, Surgery, and Emergency Medicine receiving major emphasis. No additional increase was leveled at physicians taking trauma calls or to those seeing more trauma cases. An emergency room physician reported that E.R. physicians are paying \$6,000 annually for \$1-Million/\$1-Million liability coverage. More data on physician specialty rates was made available by Medical College of Virginia. These rates are provided at \$1 Million/\$3-Million coverage through the "Group Practice Insurance Program" of the Virginia Commonwealth University. Medical College of Virginia is protected by sovereign immunity at a cap of \$25,000 carried under Pennsylvania Hospital Insurance Company (PHICO).

Although these rates played no role in the decisions to participate in trauma care, it did stimulate the establishment of a "State of Virginia Insurance Group" for the purpose of stabilizing insurance premiums for not only hospitals but also physicians.

With the establishment of the insurance program, which was primarily subscribed to by not-for-profit hospitals, came a very risk-conscious Screening Committee. This committee carefully reviewed perspective enrollees with the intent of rejecting high-risk individuals. There is a very strict adherence to a Quality

Assurance Program and Professional Review System that calls for any and all physicians' behavior which is contrary to professional standards, and any disciplinary action, to include medical-records deficiencies, to be reported. Validated charges/disciplinary actions are published and subscribed to by hospitals to guide them in their recruiting process.

It should be noted that the previously established cap of \$1,000,000 on all malpractice claims, not limited to personal injury, was overturned by the District Court. This decision was on appeal at the time of our visit.

Virginia has legislated the "State Corporation Commission," with the responsibility of watching over the insurance industry in the State. It was also believed that the State emphasized the enforcement of statutes regarding the submission of frivolous lawsuits. Virginia's common law provides for a "pure contributory negligence" defense to negligence claims which had not been legislatively changed.

The following legislation has been enacted:

1. Liability insurance companies cancellation, non-renewal and reduction in coverage; rate making.
2. Limitations on liability of corporate officers and directors; exceptions, entitlement to and procedure for advances, reimbursement and indemnification.
3. Immunity of members of local governmental entities.
4. Monetary limitation on the amount of punitive damages recoverable.
5. Exemptions from jury service.
6. Actions against physicians for vaccine-related injury or death for which compensation is available through the National Vaccine Program.
7. Certification of merits of pleading, etc., by attorney or party; sanction.
8. Statute of limitations in medical malpractice actions; minors.

9. Immunity from civil liability for officers and directors of certain tax-exempt organizations.
10. Closed claim reporting by liability insurance companies.
11. Authority to consent to surgical and medical treatment of certain minors.
12. The "Good Samaritan Act" to Obstetrics, protecting the pre-hospital and hospital personnel.
13. Enacted a "Bad Baby Bill" which governed the settlement of neurological birth related injury.

5.4 SITE VISIT SAN DIEGO, CALIFORNIA

INTRODUCTION - CALIFORNIA/SAN DIEGO

The State of California has a population of 26,981,000 and a total land area of 158,693 with an average population density of 170 per square mile. Ninety one percent of the state's population lives in an urban environment. California ranks 1st by population and 3rd by total land area.

Of the total population, 76% are White, 7.6% are Black, 16% other. Approximately 18% are Hispanic. California has experienced a net increase in population of 14% in the last six years. Per capita income is \$16,778 and unemployment is 6.7%.

San Diego County spans a geographically diverse 4,300 square miles of terrain in the southwest section of California ranging from the Pacific Ocean coastline on the west to desert and mountains on the east. It is 50% urban and suburban and 50% rural and wilderness. The permanent resident population of San Diego County is approximately 2.2 million persons with an additional transient resident population of approximately 500,000 (visitors, military, illegal aliens). Population growth is estimated at 25.5% annually.

TRAUMA SYSTEM ISSUES

The delivery of trauma care in San Diego became an issue in the early 1980's. This grew out of a debate between the hospital council and the county medical society. The council felt San Diego County had state-of-art EMS and trauma care; the medical society felt otherwise. An independent study by Amherst and Associates, financed by contributions (approximately \$15,000 per hospital), was concurrently performed over a three-month period in early 1982. The Amherst study reviewed the following five areas:

- Pre-hospital care
- Initial hospital care
- Surgical care
- ICU care
- Final disposition

The conclusion of this study was that all phases had multiple deficiencies that culminated in an overall preventable death rate of approximately 21%. It is generally felt that, if anything, the report underestimated the deficiencies in trauma care in the county.

San Diego County's political regulatory structure is complicated by 19 municipalities which exist within the county. There exists a regional board of supervisors made up of five elected members. The five elected officials each rotate as "Director" for a 12-month period. The sixth member of the team is a chief administrative officer appointed by the elected officials and functions as a "City Manager." The county health department has regulatory authority by contract with each of the 19 municipalities. EMS is regionalized and is regulated and directed by State authority. The county EMS agency is responsible for day-to-day functions as well as providing a leadership role in the community.

The responsibility for the development of a trauma system fell on local government. Initially this was a philosophy born out of necessity as traumatology was a specialty in its infancy and there were difficulties "selling" this concept locally, much less to State or Federal Government.

Today this philosophy continues to be propounded by the State Legislature and most ardently by Governor Dukmajian. Lobbying efforts by many individuals and institutions throughout the State have failed to convince the State Legislature and the Governor that implementing, maintaining, and financing regionalized trauma care is a State responsibility. This is despite the fact that regional trauma systems have now shown a statistically proven reduction in preventable trauma deaths. It also persists in light of the fact that regional trauma care in Sacramento and Los Angeles counties has deteriorated and threatens to crumble without State intervention.

To summarize, the responsibility of developing, implementing, monitoring, auditing, and evaluating trauma in San Diego County has relied almost exclusively on local resources and personnel.

In the developmental phase of San Diego's Trauma System, three basic concepts were promoted. First and foremost was quality patient care. To guarantee this, it was felt that a "systems approach" was essential as well as an understanding that the participants in trauma care were partners not competitors. Working from this framework, it was recognized that the community must be educated not only to initiate but also to perpetuate a trauma system in the county. An ongoing process was born. Educating, promoting, and lobbying the concept that reducing death and disability from trauma was a public health issue. The target of these efforts was, and still is, civic groups, the medical community, local, state, and federal legislative bodies, and foremost the City Editor.

Implementing the trauma system meant overcoming two rather impressive roadblocks: finance and liability. The number one issue

was financing the communication system. The county would not only ask the participant hospitals to finance the pre-hospital communication system, but also would require legal indemnification from problems that arose from designating facilities. Furthermore, the hospital would indemnify the county should the county fail to properly inspect the functioning of the trauma system. An initiation fee of \$150,000 was paid by participating hospitals and the requested indemnification was granted.

The designation of trauma centers in San Diego County was based on geographic need, patient population, and in the case of the pediatric and Level I Center -- special expertise. By state law "local communities" were given the authority of trauma center designation. However, state criteria based on national standards were used in the site survey designation process. The result of the process was the designation of one Level I, four Level II and a Pediatric Trauma Facility. The process was not that simple, as two hospitals in one geographic area actively sought and campaigned for trauma center designation.

Perhaps the most impressive aspect of trauma care in San Diego County is the present functioning system. While there was much work and many obstacles to overcome in developing and implementing the system, it is probably more difficult to maintain the drive and spirit of excellence once the obstacles are overcome and the novelty of a system has passed. However, several key leaders in the San Diego system have been instrumental in providing the necessary ongoing impetus. From Emergency Medical Services with Gail Cooper, to the community hospitals, to the community trauma surgeons typified by A. Brent Eastman, M.D., a true spirit of excellence and partnership continues to be foremost in driving the trauma system.

The University of California San Diego, UCSD, functions as what is nationally recognized as a Level I Trauma Center. However, UCSD goes far beyond meeting the expectation of excellent patient care,

traumatology research, and quality assurance. UCSD had taken a leadership role in the community, region, state, and on a national level. Much of this credit goes to UCSD, Director of Trauma, Steve Shackford, M.D.

Several aspects of care of the trauma victim in UCSD deserve special attention. The trauma victim, identified by pre-hospital triage, is taken directly to a trauma resuscitation room. The patient does not pass through the Emergency Department for initial triage. Once in the resuscitation room, participants' roles are rather rigidly defined. In fact there are written and posted "duties" for each surgical resident and attending trauma surgeon responding. For example, a resident is assigned to each lower extremity and to each chest wall. They are responsible for assessing injuries and initiating therapeutic procedures according to a well defined protocol. It is a requirement that a trauma surgeon be present at all major patient resuscitations.

Quality assurance has emerged as an important tool in trauma care. One excellent mechanism has been video taped recordings of trauma resuscitations. These are reviewed and critiqued at a weekly conference. The confidentiality of these recordings are protected by state statute and they are erased each week. Disposition from the resuscitation room is dictated by patient needs and may include going directly to surgery, to an adjacent Trauma Intensive Care Unit, admission for observation, or occasionally discharged if no significant injury is demonstrated. Quality assurance continues to be monitored throughout the patient's hospitalization and discharge.

The relationship between the trauma service at UCSD, administration, and other surgical sub-specialties, as well as seemingly unrelated medical specialty areas, appears to be addressed and nurtured on a pro-active basis.

It was repeatedly stressed that the resources necessary to properly operate a trauma service often placed significant strains on

administration as well as other medical specialties, and the importance of the politics cannot be overlooked.

Research has been an important aspect of patient care at UCSD. From laboratory research such as tissue growth, to clinical studies such as hypertonic saline in volume resuscitation; the University has once again emphasized its leadership role. Most recently, UCSD has acquired portable EEG instrumentation to correlate EEG, ICP, and clinical status during trauma resuscitation.

While the University exhibits a leadership role, it recognizes that the community hospitals are essential to the survival of the trauma system. UCSD has attempted to dispel the "ivory tower" concept and relates to the community hospitals as a partner in trauma care delivery.

The community hospitals in San Diego County have also used the designated criteria as a floor and not a ceiling in the delivery of trauma care. Community trauma surgeons such as A. Brent Eastman, M.D., have been very active on both regional and national levels. The community hospitals accept trauma victims primarily on a geographic basis. At present, the only trauma victims triaged to specialty centers are pediatric and burn patients. The community trauma centers require in-house trauma surgeons twenty-four hours a day. A mechanism for condition red or bypass is in place and has not been an issue until recently when a critical care bed shortage resulted in unacceptable durations of trauma center closure. Two areas of concern pointed out by Dr. Eastman as potential stumbling blocks for the trauma centers are; nursing shortages and potential problems with surgical sub-specialty backup, such as orthopedics.

The trauma service at the community hospitals must also address political and economic issues with administration and the medical staff. The economics of participating as a trauma center often exceed \$365,000 yearly. Presently the hospitals continue to pay a stipend of \$65,000 yearly to remain in a trauma system.

Additionally, if the hospital is a base station hospital its cost to operate this communication system may approach \$250,000 yearly. Balancing these costs with the ramifications of bumping an orthopedic surgeon from an insured Operating Room case can be difficult at best.

The community hospitals have, therefore, been eager to participate in quality assurance research; monthly morbidity and mortality conferences; and the exchange of information required to assure a quality regional trauma system.

In summary, San Diego County has developed a trauma system with strict medical controls exerted by an extensive quality assurance program. This Q.A. program evaluates patient care from pre-hospital triage to final patient disposition and beyond. UCSD has recognized and performed well in its role as a leader in trauma care in the community. The community hospitals have made a commitment to quality trauma care and apparently the prestige of this designation continues to outweigh the costs. San Diego County appears to have evolved a network of trauma care that has outdistanced its original concept of partners participating in a systems approach that place "patient care first."

PRE-HOSPITAL CARE/AIR AMBULANCE ISSUES

In San Diego County there are 19 incorporated cities and a county government run by a county manager, answerable to the Board of County Supervisors (five members). There is a standing Council of Hospital Advanced Life Support which has advisory powers only. There are 27 fire districts and 30 acute care ALS units. Eleven 9-1-1 centers distribute all fire and rescue calls that arrive through the county-wide 9-1-1-E service. The hospital component of the trauma system is comprised of six hospitals (one Level I, one Pediatric, and four Level II trauma centers).

Several large military bases are located within the geographic borders of San Diego County that do not actively participate in the San Diego Trauma System.

Trauma System development began early in the 1980's after the results of a comprehensive review of trauma care in San Diego County. This study was performed by an outside group of experts under the direction of Amherst & Co. and was reported to county government EMS.

A County EMS agency exists in San Diego County as mandated by State of California law. Statutory regulations are developed at the state EMS level. It seemed clear to the Survey Committee that the morale level of this system is extremely high in the governmental and pre-hospital care sectors. There are eight base stations located in hospitals which direct rescue activities. Five of these base stations are trauma centers.

Training

Pre-hospital training of paramedics is provided only through classes at the University of California at San Diego. EMT training is provided by a varied group of agencies including community college and private schools. Advanced Life Support training is elective, as is Advanced Trauma Life Support. A Basic Trauma Life Support training program is not currently available. EMT and paramedic training and re-certification criteria are directed by both state and local agencies. EMT certification is provided by a county examination consisting of both written and skills sections. Re-certification is required every two years. Paramedic certification is similar. Continuing education units are required for Paramedic re-certification. Training is certified by the EMS Medical Director who spends half-time on EMS medical direction and half-time with Public Health duties. The Medical Director is advised by the Medical Audit Committee (MAC), the Base Stations Physicians Committee, and the Pre-hospital Audit Committee (PAC). Training is paid for by sponsoring agencies or the individual, if non-sponsored.

Communications

There are two separate communications systems. Advanced Life Support activities are communicated through an eight-frequency UHF system with base hospital access. Trauma activities are communicated over five VHS frequencies. The equipment for the trauma system was paid for largely through designation fees (yearly) by the trauma centers who are associated with the County Trauma System. The equipment is owned by the county. Calls are received through the 9-1-1 system through two PSAP Centers. Rescue calls are then relayed to the appropriate responding agencies for both first and second responder determination and dispatch. Initial direction of requests for systems is dependent upon the law

enforcement agency with jurisdiction over that geographic site.
There is a county-wide communication plan in effect.

Dispatch

Dispatch is done by the local jurisdiction (usually the Fire Department for medically related calls) in direct contact with the 9-1-1 PSAP. Dispatchers in the City of San Diego are trained to do call screening and priority dispatch. All other dispatch agencies have not done dispatch training for medical call screening or priority service.

Problems

Problems identified in the current system include deterioration of equipment at base stations and difficulties in transmission due to terrain and associated technical problems. The communication system is managed by the county EMS system. No clear cut communications systems evaluations were presented.

Management

Authority over the trauma system is delegated by the State to the County EMS Agency. The County delegates authority for day-to-day operations to pre-hospital provider agencies and base hospitals. Generally, there is no medical direction of individual provider agencies. All agencies must follow the same protocols and operate under the same on-line/off-line medical control systems.

Since the pre-hospital providers have become part of the trauma system, they have discovered increasing demands for extended transportation. They have noticed reduction in scene time. All pre-hospital providers appear to agree that the trauma system has markedly improved the rapid access to quality care available to San Diego County trauma victims.

It is clearly perceived by all participating individuals that the trauma system was integrated into the already existent EMS System. Medical standards exist for triage. Medical standards for treatment and transportation are governed by base hospitals with approval of the EMS agency. The pre-hospital system makes all of its own decisions/systems planning and implementation for its segment of the trauma system through the EMS agency. It is advised by the MAC and PAC advisory bodies. The make-up of these committees also reflects a multi-disciplinary approach to all systems' issues. The providers do not act independently. There is a system for review and change. Protocols are standardized for all pre-hospital providers and base hospitals. Any changes are made through the Local EMS Agency.

Transportation

The pre-hospital transportation is provided by a variety of public and private agencies. There is a large presence in the San Diego County Trauma System of transportation capacity and responsibility being provided by private providers. One private company, Hartsons, provides all transportation services in the City of San Diego and other individually-contracted municipalities. It was estimated that 65% of all rescue transportation in San Diego County is accomplished through the Hartsons organization. Basic life support transportation services are regulated by the California Highway Patrol. Advanced life support services are regulated by both county EMS (regulated personnel) and California Highway Patrol (regulated equipment). Assessment of needs has only demonstrated one area of required change, that of the continual upgrading of the communication equipment.

Air ambulance services are provided by the Life Flight Program, associated with the University of California, San Diego, Level I, Trauma Center. Fifty-five percent of these air ambulance services are provided to on-scene activities. The ASTREA Program is a combination of aero-medical basic life and law enforcement

activities through five helicopters and one fixed-wing airplane. Dispatch of the ASTREA Aero-Medical Services are through the sheriff's department.

The State of California provides licensing standards for ground ambulances. Standards for the Aero-Medical Program have just been formulated and are in the process of implementation (state standards). Response to rescue calls is primarily through a two-tired approach. There are several types of first and second response agreements. Specific response time statistics were not available although state standards required less than 10 minutes for urban, less than 30 minutes for rural and less than 60 minutes for wilderness area response times. In the city of San Diego specific guidelines were required in the Request For Proposal application of the competing private responders and their contractual requirements. Response time is not perceived to be a problem in the San Diego Trauma System.

Basic life support units are staffed by two EMT-1's; and advanced life support units with two paramedics. First responder personnel provide a driver for transportation if two paramedics are required for patient care duties. Life-Flite provides two specially trained flight nurses on all flights. Paramedics from ground units do not accompany aero-medical personnel or their patients. Flight nurses are highly trained and permitted a wide range of both invasive and non-invasive privileges, under written medical protocols. Aero-medical units never respond as first responders. Integration of ground and air units is considered to be excellent. Aero-medical units may be requested by virtually any medical or first responder personnel. All requests are automatically honored, if equipment and personnel are available. Transport time to a trauma center is the major issue determining appropriateness of the use of aero-medical services. Aero-medical transports are paid for by the patient. Billing is through the University billing office. Typical charges are \$1,350 per transport (approximate cost is estimated to be \$1,850 per transport). Bad debt is estimated at 30%. Average ground transport

charges are approximately \$150 for Basic Life Support and \$250 for Advanced Life Support. Costs are felt to be in excess of these collections and are partially off-set by subsidization.

The major change in the transportation system that has evolved as a result of the inception of the trauma system is the increase in the number of Advanced Life Support units (up to 42 at present) and the increasing transport distance of trauma patients. All participants in the trauma system felt that their overall standards and performance had been improved by their participation in the trauma systems and its attendant Quality Assurance activities.

Reporting

A registry exists and actively supervises all reporting activities. All trauma centers and all pre-hospital providers must provide reports of their trauma and non-trauma EMS activities. Non-trauma centers are required to fill out traumatic injury reports on all injured patients, thus providing complete data to this system. The county EMS agency collects all forms and subsequent reports. Feedback to paramedics is on a monthly basis, and on a quarterly basis to base hospitals. QA is aggressively pursued and is primarily under the direction of the base hospital Medical Director.

Triage Criteria

Currently the CRAMS Criteria are utilized for triage decisions under the direction of the base hospital. A new scoring and triage system is expected from the American College of Surgeons shortly and will be rapidly implemented. The initial triage criteria decisions were made by an inter-disciplinary committee, the Trauma Task Force. Originally the Champion Score and American College of Surgeons criteria were utilized. Children are scored by the Glasgow Coma Score (between ages 2-14). Mechanism of injury criteria are used in a non-structured manner.

Medical direction of the county trauma system is provided by the Medical Director of the county EMS, Dr. Gonda.

State Legislation does exist that permits patients to bypass local hospitals to go to trauma centers.

Under-triage problems currently exist and are concerned primarily with the inebriated patient and unsuspected head trauma. Over-triage is felt to be a minor problem and not a source of irritation to either the trauma or non-trauma hospitals.

Military

The military EMS system is self-contained and not under the direction or control of the county trauma system. The military base does have 9-1-1 services but these do not interface with the civilian 9-1-1. There is a new military hospital in operation. Primarily, active duty personnel stay in the military system but instances have occurred where San Diego County EMS services were requested and provided to on-base incidents.

Undocumented Persons

Undocumented persons continue to be major population for traumatic injuries. The problem is ongoing and no solutions are seen in the near future. Illegal aliens are absorbed by the San Diego system in a highly professional manner.

Trauma centers currently operational are:

1. University Hospital (Level I) *
2. Sharp Memorial (Level II)
3. Scripps Memorial - LaJolla (Level II)
4. Palomar Hospital (Level II)
5. Mercy Hospital (Level II)
6. Children's Hospital

* University Hospital is also a burn center and poison control center. No regional spinal cord centers exists.

Summary

In summary, it was clearly evident to the pre-hospital survey group that the San Diego County pre-hospital system is a complicated one. Many municipalities with varying jurisdictions; private and public; first and second responders; federal property; large amount of wilderness terrain; multiple trauma centers; ground and aero-medical transports; public and private funding; all contribute to the current system. It is clear, however, that this system functions as a smoothly operational integrated system and that unnecessary trauma mortality and morbidity has been determined to be approaching 0%.

SYSTEMS EVALUATION/QUALITY ASSURANCE

The San Diego Trauma System was developed under the direction of the Emergency Medical Services Division (EMS) of the Department of Health Services, County of San Diego. It was designed with an anticipated volume of 2,000 - 2,500 major trauma victims annually.

The Quality Assurance tool utilized by San Diego is the medical audit process through a Medical Audit Committee (MAC). The purpose of the committee was to bring together representatives from County EMS trauma centers, non-trauma centers and the Medical Examiner's office to determine the appropriateness of care delivery to the trauma victim.

The scope of duties on which the MAC focuses are all trauma deaths (with concurrent review), pre-hospital trauma care, appropriateness of triage, and hospital trauma care. All cases for MAC are first reviewed by subcommittee and then referred for formal review. In addition to information obtained from trauma centers, all deaths (including those in non-trauma hospitals) are reviewed by MAC. In San Diego there is a mandatory postmortem examination for all traumatic or accidental deaths. Experience with the MAC has been published in the Journal of Trauma.

The MAC meets monthly and requires a significant commitment of time and personnel. The cost could be viewed as a negative aspect (cost > \$200,000). The source of review comes from a standardized trauma registry. Each trauma facility had a trauma nurse coordinator responsible for transmitting registry data to the county where it was collected. The county utilized student volunteers or work-study program participants for data entry.

It should be noted that all information utilized by MAC is confidential and protected by the California Evidence Code, Section 1157.7 which protects QA activities. While there is review and feedback by county officials and the MAC, each trauma center

conducts its own internal quality assurance programs. The University Hospital had three trauma coordinators who did extended research in internal QA matters. This is usually done by the traditional Morbidity and Mortality Conferences, trauma rounds, and review of trauma registry data.

Pre-hospital EMS-run data is also submitted to the county office. Triage is based on CRAMS scoring and mechanism of injury. All data is tied together by a pre-hospital patient record number. A unique trauma registry number is assigned at the trauma facility and cross-indexed with the pre-hospital patient record number. Discrepancies in care as identified by the MAC or other QA is referred to the Emergency Medical Care Committee.

San Diego County has a well organized system of quality assessment. Its audit process allows for the maintenance of established standards and allows for system imperfections to be corrected. County EMS officials (through a System Audit committee) have used registry data to discipline (and remove) one center from the system. This is the only system which actively used their trauma registry in such a fashion; and we should note that this was the best registry and QA effort we have seen to date. The entire process is done in an educational forum for all the participants involved. The cooperative and integrated effort of all parties is well documented in the San Diego County System.

**UNCOMPENSATED CARE, TORT CLAIM LIABILITY
AND
MALPRACTICE INSURANCE ISSUES**

Uncompensated Care

Funding for indigent care is available via the following mechanisms:

- I) Medicaid - California has a system of funding for Medicaid patients via two routes:
 - a) MediCal Patients less than 21 or more than 64 years of age are eligible: Qualified Medicaid hospitals contract directly with the State with rates negotiated individually.
 - b) Medically Indigent Adults (MIA)
Patients greater than 21 or less than 64 years of age are eligible: The State of California allocated 70% of the Medicaid monies previously spent for patients in this age group for distribution to the counties who are then responsible for developing a contractual relationship and dispersing these funds. Of the two counties visited each had developed different mechanisms to accomplish this end. A contract must exist to insure payment of physicians and hospitals. In San Diego County the County Medical Service (CMS) contracted with four agencies/hospitals to provide payment for the MIA category of patients. These contractors are then responsible to pay individual hospitals and physicians. The contracting facilities are allowed to keep any excess monies not dispersed. Each patient had to be "Medicaid certifiable" and go through a process of registration. Several trauma and non-trauma hospitals who were not the regional contractors stated that many "eligible"

candidates for MIA funds receive no funding as they did not "get registered." It appeared that all of the monies set aside for the MIA program were not spent annually for individual patient care.

2) Hospitals - Additional Funding

There is indirect funding available for trauma care at state-affiliated university hospitals/trauma centers. The State provides funding for state university hospitals as a separate line item in the state budget. This indirectly contributes to increased resources for trauma care.

Further state funding may be difficult to obtain because of Proposition 13. This public referendum placed limitations on the ability of the State to raise revenue through taxes.

Aliens

There is a large "alien" population, both documented and undocumented, in California counties close to the Mexican border. The alien population contributes substantially to the uncompensated-care patient population. There is no state funding for aliens. San Diego County is the only county which had developed a policy for funding the alien patient population. In that county only one facility, the University of California, San Diego Hospital had a specific contract to provide care for the alien population.

County Funding - Emergency Medical Services Due to the constraints of Proposition 13, County-EMS systems have supplemented tax support by license fees for trauma centers.

Automobile Insurance

The California mandatory automobile insurance legislation was upheld in 1987. In the past it has been estimated that 60% of the

patients who are injured in vehicular accidents were uninsured. It is anticipated that enforcement of this law will impact favorably on trauma centers by increasing the number of insured motor vehicular accident patients.

Impact of Designation on Hospitals - Financial

Generally, hospitals designated as trauma centers looked on their participation in the trauma system as a positive experience. Some facilities with a high proportion of bad debt had considered withdrawing from the trauma system. The bad debt problem was illustrated in San Diego by the participating hospitals reporting a cumulative bad debt of approximately \$9 million in the last fiscal year. This uncompensated care problem was further demonstrated by some participating hospitals having to pay physician stipends to maintain medical staff commitment to cover on-call trauma patients. However, continued participation by some hospitals in the trauma system was encouraged by both financial and public relations incentives. It was reported that hospitals and physicians generally felt that the quality of care in the trauma centers was of a higher standard. Hospital administrators reported a positive financial impact on their hospital as some physicians tended to place their elective-paying patients in the trauma centers rather than the non-trauma facilities. The trauma center designation also provided a valuable spinoff as the designation supplemented both the transplant and rehabilitation program of the hospital. Furthermore, participating trauma centers felt that there was a significant public relations value to the trauma center designation, with one facility estimating its value to the public relations program of \$100,000 per year.

In San Diego County there was additional cost to hospitals participating in the trauma system. All had paid directors of their Trauma Services. Additionally, stipends were paid to trauma surgeons with the average reported at \$1,000 per day.

One facility visited (Palomar) reported fixed physician costs as follows:

Trauma	\$800/day
Anesthesiologist	\$350/day
Orthopedist	\$450/day
Neurosurgeon	\$650/day

At Scripps Memorial Hospital, a Level II trauma center in La Jolla, trauma was looked on as a valuable service. Scripps Memorial is a non-profit non-teaching facility having 77% overall collections for non-trauma patients. With trauma patients, collections were 57%. Physician receipts ranged between 45% and 70% of billing. The trauma activity for the hospital is 720 patients per year. Approximately 90% of these are admitted. The average acuity is such that in excess of 50% of patients have an ISS > 10. Fifty percent of their patients also arrive by helicopter.

Palomar Memorial Hospital is a Level II trauma center which at present is threatening to pull out of the trauma system if the crisis regarding funding for indigent care is not solved. The hospital has grown in both size and prestige since its involvement in the trauma system. Trauma is labeled as being a "mixed blessing;" however, it is credited for increasing the overall quality of care at this hospital. As a district hospital, it receives public support from a taxing district which is much smaller than its trauma catchment area, which aggravates its cross-boundary reimbursement problems. There is no mechanism by which one district hospital reimburses another. Physicians at this hospital reported a collection rate of less than 50%. These factors threatened to force Palomar out of the trauma system. This would cause a shift in its indigent patient load to other trauma centers. County officials were skeptical of Palomar withdrawing because of the positive financial benefits resulting from the spinoff benefits of designation.

Malpractice Issues

The Malpractice insurance problem in California occurred in 1974 when the private malpractice insurance companies "pulled out" of California leaving physicians in a position where malpractice insurance was neither affordable nor available. At that point there were two major changes in the malpractice/tort area.

First, the private insurance companies left California and there evolved a total of five (non-profit) physician-owned insurance companies. One of these has since collapsed. Three of these were set up by County Medical Societies. There is also a co-op insurance plan that differs from the above in that initial premiums are lower; however, members are assessed additional fees based on claims' experience. Eighty percent of physicians are presently insured by the doctor-owned companies. The private insurance companies are again writing in California and have 20% of the market.

Second, there evolved tort reform specific to medical malpractice in the form of Medical Injury Compensation Reform Act of 1975 (MICRA).

The provisions of MICRA are as follows:

1. Modified the contingency fee system with a cap on attorneys' fees.
2. Placed a \$250,000 cap on pain and suffering.
3. Allowed admission of collateral source for a reduction in awards.
4. Allowed for periodic payment of awards
5. Imposed a statute of limitations.
6. Required courts to report judgments against physicians to the Board of Medical Quality Assurance.
7. Required the insurer to report any malpractice settlement awards over \$3,000 (This was later changed to \$30,000 in 1979).

8. Required a 90-day notice of patient's intention to sue.
9. Provided for arbitration.

Since MICRA, there has been additional legislation as follows:

1. Proposition 51 -- The Fair Responsibility Act abolishes the joint and several liability doctrine for non-economic damages. Under its provisions awards for non-economic damages, such as pain and suffering, are limited to a defendant's degree of fault in causing damages. This is not limited to medical malpractice.
2. Legislation which limits the use of expert witnesses testifying as to the standard of care.
3. Protection of the peer review process and limitation from liability/discoverability of peer review activities.
4. Requirement of 90-day notice to health care providers of the patient's intention to sue for malpractice.
5. Requirement that contracts for medical services, which contain a provision for arbitration of any dispute regarding malpractice, also contain a specific disclosure statement as the first article of the contract.

The consensus of those interviewed was that the state's comprehensive 1975 medial malpractice legislation, which has survived numerous constitutional challenges, has helped to curtail increases in the cost of malpractice insurance and in the size of malpractice awards/settlements. A similar conclusion was reported in the 1986 GAO report to Congress. (See Attachment 6.5). Those interviewed told us that they expect the legislation to have a greater effect in the future since the California Supreme Court has upheld the major provisions as constitutional. Despite these efforts, however, physician and hospital malpractice premiums are continuing to rise, as are the number and size of malpractice claims and settlements.

Specific to trauma centers there was a general consensus of those interviewed that in their system there was no significant increase

in the incidence of malpractice associated with trauma. However, a higher standard of care has evolved with the implementation of a trauma system which has placed non-trauma centers at increased risk for liability when they choose to treat trauma victims rather than transfer the patient to a trauma center. There also is a benefit due to the public perception that "If you weren't saved at a trauma center then you couldn't be saved."

In evaluating the potential for claims arising out of EMS participation in the trauma system, it was reported by the San Diego County Attorney's Office that there had not been any claims against the county for any activities involving the trauma system.

5.5 SITE VISIT
ORANGE COUNTY, CALIFORNIA

INTRODUCTION - CALIFORNIA/ORANGE COUNTY

The State of California has a population of 26,981,000 and a total land area of 158,693 with an average population density of 170 per square mile. Ninety-one percent of the state's population lives in an urban environment. California ranks number one in population and 3rd in total land area.

Of the total population, 76% are White, 7.6% are Black, 16% other, and approximately 18% are Hispanic. California has experienced a net increase in population of 14% in the last six years. Per capita income is \$16,778 and unemployment is 6.7%.

Orange County is located just south of Los Angeles County in southern California. It is primarily urban and high density suburban and has a population of approximately two million and a total land area in excess of 700 square miles. Orange County is one of the fastest growing areas of the country with growth estimates running as high as 31%.

TRAUMA SYSTEM ISSUES

Orange County, California has a mature trauma system that has developed according to a master plan. This master plan included the solicitation of "requests for proposals" from area hospitals desiring to become a part of the County's trauma system. The number, location, criteria, and evaluation of prospective hospitals was largely done with input from "outside expertise." The state set a minimum standard for trauma center designation but empowered local government to assess the need and grant designation as it deemed necessary. This process resulted in the original designation of five trauma centers. One facility withdrew, and while there was much concern that this would overburden the remaining trauma centers, it has been demonstrated that the remaining four trauma centers can adequately handle the trauma load in Orange County.

The current overall management structure in the Orange County trauma system exists within the EMS system. Two physicians, recommended by the Orange County Medical Society, are responsible for medical protocols and quality assurance. The County Health Care agency is responsible for administrative protocols. While there exists an Orange County Trauma Society, it has no authority to implement policy.

The day-to-day management appears to fall largely on the shoulders of the individual trauma centers. Apparently there has been no crisis management necessary that would require an overall medical director. The system, in fact, appears to function on its own inertia and the participants appeared satisfied with this format.

The four trauma centers listed below, extend care to all trauma victims with the exception that burn victims are triaged to UCIMC.

UCIMC - University of California Irvine Medical Center

FVRH - Fountain Valley Regional Hospital

WMC - Western Medical Center

MCH - Mission Community Hospital

The trauma service functions within the Department of Surgery at each of the four trauma centers. However, generally the Trauma Service appears to maintain a status equal to its peers such as the Department of Medicine, OB/GYN, and Radiology. The only exception would be the priority of the major trauma victim to access the surgical suite over an elective case.

Administration at all four centers appears supportive of the trauma system approach and feels designation remains an enhancement to its image.

Each trauma center has a medical director who is responsible for the overall policies and procedures within that facility. A trauma nurse coordinator is an integral part of each trauma center. Responsibilities include: quality assurance, day-to-day functions, and nursing staff response to trauma codes.

At Mission Community Hospital, the trauma nurse coordinator has a rather unique role. She is a member of a team of nurses that works very closely with the trauma surgeon. The trauma nurse coordinator responds to all trauma codes, accompanies the patient to ancillary services, scrubs in surgery, and proceeds to recovery room and the surgical intensive care unit (SICU). The trauma nurse coordinator continues to follow and make daily rounds on the trauma victim assessing such diverse aspects as nutritional status, antibiotic use, and length of stay. The trauma nurse coordinator also serves as a liaison with the family, making daily contact at a specified time.

No significant changes in medical staff bylaws were observed as a result of the designation as a trauma center. The trauma surgeon functions as "captain of the ship" at all four trauma centers. The one exception to this is neurosurgical patients. In Orange County there are nine neurosurgical receiving facilities and patients triaged as having pure neurosurgical injuries go directly to the neurosurgical receiving facility and to the neurosurgeon on call. A

recent local study demonstrated that multiple trauma patients were not being under-triaged as isolated neuro cases.

Trauma Center Designation

In California, state law "allows for the local community to designate hospitals as trauma centers."

The initial designation process in Orange County was to elicit from Community Hospitals a request for proposal (RFP). Of the 37 licensed hospitals in Orange County, 20 requested RFP information. Ten RFP's were submitted and five hospitals were designated as trauma centers. The mechanism was "elaborate, complex, and relied heavily on expertise from outside the county through site surveys."

Criteria for designation were distributed to the task force and include designation for Level I, Level II, Pediatrics and Base Station Hospital.

Re-designation is required by law every two years. With each re-designation there has been "significant measurable improvement in the quality of care." The re-designation process "encourages and nurtures the maturation of the system."

Designation was done exclusively on a local level. There were no apparent "sophisticated efforts or criteria to address demographics or volumes." The American College of Surgeons Guidelines were used.

Initially, there was the perception from non-trauma hospitals that a significant loss of patients would occur as a result of triage to the trauma centers. This concept was dispelled in a study done and published by Peter Anderson, M.D., Director of Emergency Medicine at Fountain Valley Regional Hospital. Today there are few or no complaints received from the non-trauma hospitals.

The trauma centers have evolved to a level of expertise that provides for the triage and transfer of trauma patients to their center.

Due to an "inability to sustain the level of interest of the medical staff," one of the original five designated trauma centers withdrew from the system.

There has been a steady increase in the number of trauma victims to each facility which apparently mirrors the data presented by UCIMC. Total number patients/year; 165(1981), 204(1982), 414(1983), 658(1984), 816(1985), 1080(1986). The mix of trauma patients to UCIMC reflects the relatively low community mix of penetrating to blunt trauma with UCIMC receiving 83.3% blunt trauma and 16.7% penetrating. The death rate was low (6.4%), average age 28, and Average Index Severity Score of 10.5.

PRE-HOSPITAL CARE/AIR AMBULANCE SYSTEMS ISSUES

General Comments

This section will address Orange County, California, as it operates its pre-hospital EMS system to facilitate trauma care. Although the governing statute of the California Administrative Code directs EMS delivery for the entire state, each county has a great deal of latitude in the development and management of its respective EMS systems. State statute directs each local community to designate an EMS controlling agency and Orange County has had such an agency since before the state rules were promulgated. This agency is both well organized and functional as it interfaces with all aspects of the EMS delivery system. The County of Orange Health Care Agency has a Director, Director of Medical Services, and an EMS Program Director. The EMS Program Director is chiefly responsible for the operation of the system as it relates to EMS and Trauma Care. In addition, the local medical association designates a Medical Director and Assistant Medical Director who are emergency department physicians who devote 50% of their time to the medical director duties.

A number of advisory committees participate in the governing of the system including the Orange County Fire Chiefs' Association and six regional paramedic advisory councils. The transportation sub-committee is a key coordinator of the pre-hospital phase and reports to the Medical Care Committee (required by state law). Through input from the various advisory groups, policy is set by the Orange County Board of Supervisors. Actual medical policy and direction is established by the Medical Director. An essential ingredient in the success of this multitude of advisory groups is the submission of all policies and procedures to all committees for a 70-day review before adoption and implementation.

Pre-hospital Providers - Ground

Ambulance service in Orange County is almost exclusively a two-tier system with the Fire Rescue Departments providing Advanced Life Support response in non-transport as well as transport capable vehicles. Actual transportation is provided by private ambulance service in Basic Life Support vehicles. These private agencies operate under contract with the respective communities in which they operate. All contracts are approved by the county. The Fire Department and ambulance companies are dispatched simultaneously and many times arrive on the scene at the same time. If Advanced Life Support transport is required, the paramedic will accompany the Basic Life Support unit to the hospital and utilize his portable equipment.

In Orange County, it was stated, that all paramedics are fire department employees. Since 1972 approximately 36 paramedics per year have been graduated from the training programs. The county pays for this training in full, and additionally monitors and provides instructors (state-certified) to deliver the program. In July of 1988 training will be shifted to a private college setting and the county will assume no expenses for this training.

The average response time in Orange County was stated to be 9 minutes with a transport time of 20 minutes. The medical director stated that in 1987 Orange County will receive approximately 89,000 medical aid (9-1-1) calls of which 43,000 will require hospital base station contact. Of these calls, 3,500 will have trauma designations. The hospital contact by the pre-hospital personnel is a high priority item in the Orange County System. A Mobile Intensive Care Nurse (MICN) is the contact person through whom all requests for orders are generated. The MICN is trained and certified through the Medical Director and is required to monitor the radio system 24 hours per day at the Paramedic Receiving Center. Patients are transported to the nearest appropriate receiving center.

Dispatch is handled by fire service 9-1-1 Centers. Problems with the current system are inherent to areas of varying elevation as well as urban considerations; however, Orange county is in the installation phase of an 800 Mhz radio system which they believe will solve this problem. The particular radio package includes two independent but interconnected mountain-top systems set on two separate peaks and a county-wide mountain-top system working simultaneously on three peaks in strategic geographic locations. In the simulcast mode communications coverage is enhanced through microwave interconnection and centralized computer technology in the trunking system. The computer coordinates channel assignment at multiple sites allowing the mobile to access an appropriate control channel and be switched to a free-operating channel.

The current (6/16/87) maximum allowable emergency ambulance service rates in effect in Orange County are: Base rate: \$110; Mileage: \$7.50/mile; Night call: \$22; Emergency: \$22.

Staffing on paramedic units is two paramedics. Currently there are 350 paramedics (EMT-P) certified and 2,200 fire first responder (EMT-1). In addition, there are 50 ambulance vehicles staffed by EMT-1's.

Pre-Hospital Providers - Air

Helicopter transports in the Orange County system are handled primarily by two hospital-owned and operated aircraft. According to standard operating procedure of the Orange County Fire Department, "Helicopter assistance will be activated only in the case of critically ill or injured patients or prolonged rescue problems." The system was activated when long travel times by ground vehicle or inaccessible locations were encountered. The basic helicopter crew includes one pilot and one flight nurse. The on-scene paramedic accompanies the patient to the hospital. The helicopters are available 24 hours per day and are dispatched by the

Emergency Operations center on a rotating basis. These aircraft serve larger areas of southern California than Orange County.

Trauma System

There are currently four trauma centers in the Orange County area and it was apparent that all members of pre-hospital EMS closely adhere to the policy of transporting trauma patients to trauma hospitals. The medical director has subdivided trauma victims to critical and moderate; however, it was emphasized that tremendous emphasis is placed on the paramedics evaluation to determine the appropriateness of trauma center destination. The official final authority for the designation of any trauma patient is by the base station physician. The medical director stated that "no major complaints had been received by surrounding hospitals with regard to a decrease in patient census after trauma center designation." Currently 100 patients per day are being sent to trauma centers with an average patient loss at other base hospitals of less than one patient per day. It was noted that trauma centers frequently had to close for short periods due to volume. The goal for on-scene treatment of trauma patients is 10 minutes. There is not a serious concern with over-triage and "it can be lived with."

Conclusions

As in many other successful trauma systems that have been evaluated, the strong point of this system is an extremely organized management system with close cooperation among participants in the network. The system of advisory committees and formalized input from all segments permits the flow of information and necessary feedback to guarantee quality assurance and effective EMS delivery. In this application the two-tier system appeared to work well and no plans to change this concept were contemplated. Good service by pre-hospital providers enhanced the acceptance of this concept. As noted in the San Diego system, a strong California state law further facilitated effective trauma system guidelines.

The assistant medical director best sums up the general opinion of this system by all participants, "I think our system is excellent." He further stated that the four key elements of the Orange County system were commitment, quality assurance, liability, and money.

SYSTEMS EVALUATION/QUALITY ASSURANCE ISSUES

State statute in California is applicable to Orange County as was observed in San Diego.

Quality assurance (QA) is overseen by a QA board which is appointed by the County Board and Supervisors but operates independently of the Emergency Medical Care Committee.

Orange County uses private ambulance companies as well as fire rescue vehicles. The system is made up of eleven hospitals of which four are trauma centers. In addition they have "neurosurgical centers" which do not need to be trauma centers. There is no specific pediatric trauma center although most children's injuries are taken to a pediatric hospital (St. Joseph's). A poison control center is to be designated "soon" at the University of California, Irvine (UCI). A burn center already exists at UCI. Coordination of dispatch for trauma patients relies heavily on the base hospital concept. The exact purpose and regulation of the basehospitals is unclear.

EMS-run data (42,000/year) goes to the EMS office as well as the patient's hospital chart. Base hospitals review their own data; this is not routinely done at the central office. Base hospitals also have a report which is computerized at each individual base hospital and the disks sent to the central EMS office. There is a neuro registry report which is separate from the trauma registry report. Trauma registry reports are filled out at each trauma hospital and sent to EMS where they are coupled with base hospital reports. Every two years surveys of trauma hospitals are done using out-of-county or out-of-state physicians.

No data is compiled on basic life support transports without paramedic support. Problems involving under-triage are picked up only through the complaint system or a coroner's report and generally do not come to EMS' attention. In order to decrease the

amount of under-triage to as close to zero as possible (it is estimated to be less than 2%).), the system is willing to accept a 55% over-triage rate. The consensus appears to be "not to force the system to try to be too accurate."

The trauma registry review is done by a Trauma Operations Committee (TOC) which is comprised of a surgeon from each trauma center. They are currently in the third rewrite of the registry since the start of the system eight years ago. The trauma nurse coordinator collects the data. They have now accumulated approximately two years' worth of data but it has not as yet been collated. This was attempted in the past, but the system collapsed due to time and manpower requirements. The system currently relies on a two-year review by outside surgeons. This is based on random sampling of identified problem charts. They otherwise rely on "intensive in-house QA" which amounts to mortality and morbidity conferences. It is also felt that further review based on EMS data is "redundant."

The EMS agency is mandated by Title 22 - 100261 to conduct periodic performance evaluations of the trauma system. This is to include all aspects of trauma care; pre-hospital and in-hospital. No documentation of these evaluations was provided.

The EMS agency has specific guidelines which must be met for data collection. Each pre-hospital care provider and trauma center provides data to the agency. While the agency collects the data, they admit that with the limited resources available to their office, that there is no constructive review of collected information. Most of the data collected remained on hard copy, was not computerized, and sat in boxes within the EMS agency office.

A representative from the trauma center aspect of the system was not available to this Subcommittee.

UNCOMPENSATED CARE, TORT CLAIM LIABILITY
AND
MALPRACTICE INSURANCE ISSUES

Uncompensated Care

The population of Orange County is more affluent than that of San Diego and there is not a large alien population. As such, there was not as severe a problem with alien-related uncompensated care. There was a lower proportion of penetrating trauma evidenced in Orange County. Given the above, funding for indigent care was not as significant a problem in Orange County.

Medi-Cal (Medicaid) reimburses each hospital for services based on an individually negotiated rate. Medically Indigent Adult (MIA) funds are paid directly from the county to each of the contract hospitals. There was reported a trend toward a reduction in the number of patients presenting with insurance. One facility reported a reduction in the number of patients with conventional private insurance from 80% to 40% between 1983 and the present period.

In Orange County, there was a conscious effort to over-triage. Statistics were presented which indicated an over-triage of 55% with an under-triage of 2%. Reflecting this trend there was an increase in the number of patients per month transported into the average trauma centers, from 30 patients in 1983 to 100 patients in 1987. The "cost" to each of the non-trauma centers of over-triage is 20 patients per month. Of those trauma patients transported to trauma centers, between 90% - 97% were admitted. Triage criteria were liberal with all truncal trauma transported to trauma centers due to the subtle potential of pulmonary, hepatic, and splenic injuries. All participants interviewed felt that over-triage was necessary with the new standard of care which had emerged. It was stated that "we have gone in the direction of safe rather than accurate triage".

University Hospital (UCIMC) in the city of Orange is a Level I Center. Surgical residents provided the in-house surgical staff with the attendings on call to respond. This was in contrast to San Diego, which requires staffing by practicing surgeons and will not allow residents to fulfill this requirement. Orange County also allowed out-of-house surgical response "with the trauma surgeon meeting the patient at the front door." There were statistics to document that all physician responses were within 15 minutes of the initial notification and there was only 1% of trauma "calls" where the surgeon was not present in the Emergency Department within 2 minutes of the patient's presentation. Mission Valley Hospital reported a savings allowed by out-of-house staffing, which allows them to stay in the trauma system (estimated cost of a \$1000 per day or \$365,000 annually). Out-of-house staffing also allowed effective coverage by only 5 trauma surgeons. In contrast, facilities requiring in-house coverage tended to require 8 - 10 trauma surgeons in order to avoid burn-out.

The surgical care was facilitated by providing a team of trauma nurse coordinators who effectively functioned as house officers. These nurses function in a coordinated effort to:

1. Assist the trauma surgeon in the initial resuscitation of patients on arrival.
2. Scrub with the surgeon.
3. Round several times daily on all patients.
4. Maintain flow sheets and present the cases to the surgeons as they make rounds.

It was reported this concept was being developed further at another trauma center with trauma nurse coordinators who functioned as first surgical assistants. Dr. Schaefer, the Chief of the Trauma Service, felt if activity increased they would probably go in the direction of in-house surgical staffing. At present, they maintain 40-50 trauma patients per month with an average of 10-15 patients on the trauma service at any given time. Western Medical Center in Santa Anna reported an activity of 90-100 trauma patients per

month, all of which were admitted. High admission rate is partially a risk management decision, meaning that "if they meet criteria to be brought to a trauma center, they should at least be observed." Western further related that they have seen a reduction in the percentage of penetrating trauma from 30% to 14%. It is not known how much of this "reduction" resulted from over-triage (i.e., penetrating trauma would have been transported to trauma centers under the previous criteria).

Malpractice Issues

The consensus of Orange County medical and administrative personnel at the facilities we visited was that there was not an increase in the incidence of tort associated with trauma. There seemed to be general agreement that tort reform had not reduced the incidence of tort but had only contained it to a more manageable level.

The major effect appeared to be on the non-trauma centers which are now held to a higher standard of care. This is particularly evidenced when patients who initially present at non-trauma centers are not transferred expeditiously to trauma centers. Patients were reportedly transferred based on medical need and without consideration for the patient's financial status.

The reader can find additional information on the statewide perspective of medical malpractice issues in the San Diego, Uncompensated Care section of this document.

5.6 SITE VISIT
SALT LAKE CITY, UTAH

INTRODUCTION - UTAH

Utah is a largely rural state with a population of approximately 1.9 million people. It has a total land area of 84,916 with ninety percent of the resident population living in the Wasatch Valley, a land area of some 2,500 square miles. The average population density is 20 per square mile. Eighty-four percent of the state's population lives in an urban environment. Utah ranks 35th in population and 11th in total land area of all the states.

Of the total population, 92.6% are White and approximately 4.1% are Hispanic. Utah has experienced a net increase in population of 14% in the last six years. Per capita income is \$10,743 and unemployment is 6%.

Salt Lake city lies in a mountainous valley with the Wasatch Mountains to the east and north rising above the city to 11,500 feet. The Oquirrh Mountains border the western edge of the valley and rise to 9,500 feet. Salt Lake's official elevation is 4,330 feet above sea level. The population of Salt Lake County exceeds 700,000 people and is growing at the rate of 2% per year.

TRAUMA SYSTEMS ISSUES

System Management

Regulatory authority for system development and monitoring is found in the State of Utah Health Code. An Emergency Medical Services Systems Act empowers a select committee of thirteen persons; twelve health care providers and one consumer, to evaluate, develop, and monitor trauma services statewide. This committee is appointed by the Governor. The State Department of Emergency Medical Services has authority to administer and enforce rules established by the committee, including trauma center designation. These responsibilities may be delegated to local agencies.

The Department has chosen a team approach to system management rather than assuming a more forceful regulatory activity. This appears to be a reasonable decision given the focus of resources in the valley and natural barriers preventing development of alternative medical resources in mountainous rural areas.

There is no single medical director with day-to-day system oversight such as was observed, for example, in the State of Maryland. Each medical facility designates a director who manages trauma services within that hospital. A committee structure is utilized by State Emergency Medical Services for policy direction and problem solving.

State law has been recently rewritten and enacted by the Legislature, due in large part to the Governor's interest, which provides an adequate framework for addressing developmental issues. State regulatory costs are offset by an override on certain moving violations. No State ad valorem tax dollars provide direct support for trauma services.

The System

The state-wide system is made up of forty-one medical facilities subdivided into four EMS regions, each with an EMS Coordinator employed by the State Department of Emergency Medical Services.

Two major hospitals, LDS and University, jointly provide Level I services within Salt Lake City. The forty-one hospitals breakdown as follows:

- (1) Level I (LDS/University)
- (4) Level II
- (36) Non-designated

Trauma victims in the Valley are transported to an appropriate medical facility using State-approved triage guidelines based on a CRAMS score. Outside the Salt Lake Valley, patients are transported to the nearest facility and then referred to a trauma hospital. The CRAMS scoring system was chosen based on a prospective study performed in 1985 at LDS Hospital under the direction of Terry P. Clemmer, M.D. Patients with a score of six or less are immediately triaged to the trauma facility.

Coordination and medical evaluation occurs at several levels. In addition to on-going hospital-quality assurance efforts, State EMS Coordinators work continually with individual facilities. LDS/University maintains a coordinating council made up of hospital executive officers, chiefs of medical staff and other significant interests to ensure that areas of concern are regularly addressed. Other coordinating efforts take place through similar cooperation of participating system agencies. While the State EMS office has developed a comprehensive set of rules to guide the system, they are not all presently in place. To date, there is no registry in place to accumulate data necessary for system and patient evaluation. One result is an inadequate system-wide database to determine whether

over- or under-triage is a problem. This information could contribute to further refinements of the system. Quality assurance efforts may be hampered further by the lack of statutes requiring autopsy in certain situations. It is important to note that the community is supportive and, despite the lack of definitive data, the perception of the public and health care professionals within the state, is that patients generally receive good care.

System design within the Valley appears to have been largely motivated by competition for territory, patients, and prestige. It is to be expected that growth of services outside the more populated centers would be hampered by problems in communications, transportation, lack of facilities, and overall medical resources. Life-Flite, the air transportation component, has tended to unify the state by enhancing the rural communities' capacity to deal with seriously injured patients. With this increased contact among communities, lines of communication have been opened leading to the flow of more medical information and a greater dissemination of educational programs.

Presently, the parts of the system that are in place appear to be viable and in good financial health. Hospital administrators and physicians do not consider medical malpractice or uncompensated care to be of sufficient magnitude to adversely affect services. Additionally, there appears to be a strong local societal ethic toward meeting debt obligations. This tends to mitigate the non-pay problems identified in other site visits.

There were no reports of patients being bypassed to other emergency departments. Hospitals accept patients based on overall guidelines without question. Interfacility transfers are accomplished on a physician-to-physician level based on medical necessity.

Trauma Center Management

Site visits were made to:

- LDS (Level 1)
- University (Level 1)
- Children's Pediatrics
- Cottonwood (Level II)
- Utah Regional Medical Center (Level II)

Trauma services within these facilities are directed by a physician with that specific responsibility. Typically, trauma does not have departmental status. However, services are well organized in each facility and maintain a good day-to-day working relationship with the hospital administration.

LDS Hospital, the largest service, seeing some 700 serious patients (CRAMS score of six or less) annually, uses a salaried physician director and salaried physician specialists. Life-Flite, the air ambulance service, also operates from this facility.

University Hospital, treating approximately 250 multi-system trauma patients annually, also houses the major burn specialty unit. It utilizes the physicians-in-training of a large medical school to provide adequate staffing. University Hospital tends to receive referral patients from rural facilities who are sicker and require longer hospitalization. This is due largely to the failure of rural EMS systems to implement pre-established trauma protocols and thereby fail to transport seriously injured patients to a trauma facility rather than the nearest facility.

Even though tension exists in all of the hospitals as a result of internal competition for use of facilities, there is no indication that hospitals have had to change their by-laws to reconcile problems. Each of the hospitals visited indicated that they were aware of these kinds of issues and possible implications concerning patient

flow from the onset. Consequently, while there are continuing discussions about methods to improve each hospital's stake in the outcome, no drop-outs have occurred due to financial reasons or medical malpractice issues.

Designation Process

Utah uses the American College of Surgeons guidelines as a basis for designation but modifies them to accommodate available resources. The process is a state responsibility under the Governor's appointed committee. Initial categorization was an application process. On-site inspection is authorized under the rules.

Designation resulted in some patient population shift. One facility reported that it lost patients through the triage process and it has initiated discussions at the inter-hospital coordinating committee level to require patients scored as CRAMS 7 and 8 be brought to that facility. While a decision has yet to be reached, it is apparent that some economic consequence has been noticed.

Relationships between designated and non-designated facilities are generally good. Because of the rural nature of much of the state, all facilities have a stake in the system outcome. Participating hospitals have shown a willingness to become involved in educational outreach programs and a sharing of information.

PREHOSPITAL CARE/AIR AMBULANCE SYSTEM ISSUES

General Comments

This section will address Salt Lake City, Utah, specifically with reference to the State EMS System. As Utah is essentially a state-managed EMS delivery system, the key elements are uniform throughout the state. Salt Lake City is the center of the system, particularly where trauma care is concerned.

Authority for the Utah system is derived from Chapter 8 of the Health Code of the State of Utah. This chapter established the State Emergency Medical Services Committee composed of 13 members appointed by the Governor and approved by the Senate. The committee is made up of representatives of all phases of EMS and has complete review and rule making authority for the full range of EMS issues and funding. Reporting to this committee is a full network of committees and staff who serve in an administrative capacity. Most significant from a state perspective was the designation of regional EMS administrators who took a very active role in the delivery of EMS in their respective regions. This included personnel testing, provider inspections and licensing, and general review of the agencies delivering EMS in the area. These individuals appeared to be constantly busy with recurrent training and renewal of licenses by the various agencies. The medical community is generally very supportive and involved in pre-hospital EMS.

The success of this system is largely associated with a cooperative spirit among all participants, and with strong individuals who have been associated with the basic components and concepts since inception of the program. Most notably from the pre-hospital perspective is the "Priority Dispatch System" employed throughout the state. It was emphasized that the intention of this system was the appropriate selection of a response team and not to select a victim out of the system. Another strong point of the priority dispatch system is the on-line immediate assistance for the caller.

All requests for EMS are handled by state-certified Emergency Medical Dispatchers (EMD) who refer to the priority dispatch card system. EMD certification is voluntary; all EMS dispatch agencies must have a dispatch system approved by the local medical advisor.

Pre-Hospital Providers - Ground

Ambulance service in the Salt Lake City area is two-tier in design with Fire Departments providing Advanced Life Support services and private ambulance service providing transport. The units are dispatched simultaneously and arrival is under five minutes for the first response vehicle. In the City of Salt Lake, "Rescue Engines" are utilized for Fire Department response. These are full fire engines with a five-man crew including two paramedics. Upon arrival, the paramedics initiate the proper level of care and if Advanced Life Support procedures are required, a paramedic will accompany the Basic Life Support ambulance to the hospital. A paramedic must accompany the transport of patients approximately 50% of the time. Including the small municipalities, ten fire departments and one private ambulance service operate in Salt Lake County. It was noted that the rules governing operation of ambulance services closely parallel the State of Florida; however, there are additional levels of certification which are in the process of being refined to EMT-1, EMT-Intermediate, and EMT-Paramedic.

All paramedic training is administered by Weber State College and students must be recommended and sponsored by the provider agencies. The course is 880 hours, which includes field time. Before operating as a Paramedic, candidates must serve an apprenticeship after which they are eligible for the certification exam.

Communications for the pre-hospital providers is managed by the fire service through a 9-1-1 system (soon to be an enhanced 9-1-1). Although this system appears to function satisfactorily, some field

personnel felt that delays in information occurred when accessing the Emergency Communications Center (ECC). This occurs when contacting the hospital from the field. The system is currently handling approximately 32,000 calls per year in the Salt Lake City area. A Hospital Emergency Action Radio (HEAR) System is utilized for hospital-to-mobile communication. Emergency Medical Dispatchers (EMD) receive a 24-hour course for certification including eight hours of CPR and sixteen hours of dispatch training.

The maximum allowable ground ambulance rates in Utah are set by the State. Currently the base rate for Basic Life Support is \$120 per call; \$5.50 per mile; \$18 emergency surcharge; \$18 night surcharge. The maximum allowable charge for Advanced Life Support is \$240 per call. It was stated by the EMS Staff that the private ambulance provider experiences an 87% collection rate.

Two small communities visited in adjacent counties utilized a one-tier system operated by the city government. Orem responds to 2,200 total calls per year, and Provo responds to approximately 2,000 per year.

Pre-Hospital Providers - Air

Helicopter transport in Salt Lake City and the State of Utah are handled by two hospital-based helicopter and fixed wing operations with highly developed systems design and operation criteria. The Director of one of the systems is a nationally known leader in the field of air ambulance and pre-hospital helicopter service. A strong point of this system is quality assurance and feedback to the on-scene paramedic. In 1984 the State of Utah Emergency Medical Services convened a special subcommittee to develop areomedical regulations. Using a three-level approach based upon the patient's requirements for basic, advanced, or specialized medical care and the urgency of the transport, the subcommittee was able to derive medical categories necessary for the selection and utilization of air ambulance services. Minimum standards were then developed for

each category of air ambulance service. The helicopters are available 24 hours per day and are dispatched by the fire department. Although competitive, the services back each other in the event one is unavailable. Crew skill in high altitude and mountain flying is essential in this geographic area. The helicopter services are committed to transport for areas surrounding Salt Lake City and neighboring states; however, the fixed-wing aircraft is utilized on long transports.

Trauma Systems

There is a consortium for Level 1 trauma center care in the State of Utah at this time. Hospital providers appeared to transport to the appropriate trauma center in all instances in the Salt Lake City area. This observation was not true in adjacent counties where local hospitals were considered competent but were not designated trauma centers. To transport to a trauma center from these areas would have necessitated a long-ground transport or utilization of the helicopter. Trauma centers are required by law to submit registry data to the State of Utah. This demographic data is compiled by the state office and utilized in rule making, grants and general feedback to system participants.

Protocol guidelines dictate the CRAMS scoring method for trauma victims. Nevertheless, Utah is another system that relies heavily on the experience of the on-scene paramedic to determine patient access to the trauma system. A retrospective review of the use of the CRAMS scoring system in Utah has determined that paramedic scoring agrees with the emergency department physician scoring in over 95% of the case studies.

Summary

The State of Utah is most noted for the "Priority Dispatch System;" however, the entire EMS system is a highly organized and inter-related network which operates in a cooperative and unified manner. System participants have a high degree of pride in the quality of the system and observed responses were rapid and efficient. A high degree of cooperation exists in the pre-hospital setting largely due to adequate service being provided by all participants.

A state law which grants the EMS committee rulemaking authority is working well for the citizens of Utah as realistic feedback is accessible by the community. Representatives of the various provider groups have a direct voice in the operation of the system.

Although certain key individuals have obviously been instrumental in the development of the Utah system, the continued success of this system seems attributable to the spirit of cooperation by all EMS providers.

Of note in this review is the socioeconomic considerations inherent in this locale which impact heavily on the willingness of all participants to fully support the system.

SYSTEMS EVALUATION/QUALITY ASSURANCE ISSUES

In Salt Lake the Level I trauma center is actually three hospitals combining resources (LDS, University, and Children's). The trauma patient is triaged to a trauma center based on the CRAMS score. It appears that the CRAMS score is primarily used to identify which patient must be transported to a Level I trauma center since Level I trauma centers receive all trauma patients with a CRAMS score of six or less. Trauma patients with CRAMS scores above six may be transported to a Level II hospital although it was stated that these patients might also be transported to a non-designated hospital.

There was some confusion as to the function and designation of Level II Centers. It was unclear which category of trauma patient was required to be seen at a minimum of a Level II trauma center since non-Level II hospitals also received patients with CRAMS scores of 7-10. It was stated that any facility not a Level I was de facto considered a Level II whether designated as such or not. Patients with scores of 7 or above are transported to the nearest facility or to the facility of the patient's choice. One representative of a Level II trauma center stated that his hospital may not apply for redesignation because it did not appear that the patient-mix changed substantially between hospitals with Level II trauma designation and hospitals with no trauma designation.

The Utah EMS incident report is similar to other run reports that have been reviewed in this study. Trauma registry data is not collected state-wide or area-wide; in fact, University Hospital and LDS Hospital each has separate registry forms. The data collected is not used in a constructive fashion to correct existing problems. It appears data collection is made easier by the relatively low trauma volume service by this system. The most complete trauma registry is through LDS Hospital (and is associated with the ICU registry). Emergency room logbooks are relied on heavily for information in Utah. At LDS, which is the major trauma hospital, trauma audit review is done by the nurses on the emergency room charts.

Problems that arise after the patient leaves the emergency department, are dealt with in Morbidity and Mortality Conferences. There was no preventable death data or registry information on patients not taken to the Level I center.

UNCOMPENSATED CARE, TORT CLAIM LIABILITY
AND
MALPRACTICE INSURANCE ISSUES

The Trauma Network, as it currently exists in Salt Lake City and the State of Utah, does not have a recognizable problem with uncompensated care nor extraordinary concern regarding medical malpractice issues. The State of Utah and the area in which the system operates is composed of a homogeneous population covered by third-party carriers and governmental programs in the form of Medicare and the Medically Needy Program (Medicaid). Automobile insurance laws are enforced and Medicaid reimbursement to hospitals is at the 60% level of charges per diem with retroactive coverage of eligible patients from the date of injury. Physicians are presently reimbursed under Medicaid at a 60% level of charges. Medical malpractice insurance is available with a trauma surgeon presently paying \$24,000 per year for a mature policy at the \$1-3 million level. A mature policy for an emergency room physician at the same level is available at approximately \$10,000 per year.

Background

Salt Lake City has within its network two Level I hospitals existing as a consortium. These hospitals are the University of Utah and the LDS Hospital. Pediatric patients under the age of twelve years are directed to the Primary Children's Medical Center (PCMC) which is not a designated facility. All hospitals participating in the system are non-profit hospitals. There is no county nor district hospital in Salt Lake City and all trauma victims are triaged to these three hospitals who have a CRAMS score of 6 or below.

All trauma centers receive patients irrespective of their ability to pay. No hospital indemnifies its physicians and only the LDS hospital pays its physicians a stipend, currently \$500 per day for the general surgeon on call. At no hospital in the system is the physician required to be physically present 24 hours a day within the

hospital. They must, however, carry a 2-way radio and be promptly available. The initial stabilization and resuscitation is carried out in tandem with emergency department physicians.

The payer mix of the hospitals are approximately as follows:

<u>PAYOR GROUP</u>	<u>UNIVERSITY OF UTAH</u>	<u>LDS HOSPITAL</u>	<u>CHILDREN'S</u>
Private	50	50	60-70
Medicare	17	35	
Medicaid	11	7	20
Self-pay	7.5	7	12
Other	15		
Bad debt/charity	7	7	7

Hospitals recover 75% of charges generated from patients within the trauma system. At the University of Utah Hospital, 22% of patients are referred from out of state, yet they represent 30% of the hospitals uncompensated care (bad debt for trauma). The Medicaid Program has retroactive qualification from date of injury and the Medically Needy Program exists which also is retroactive when patients can qualify for coverage. There is no special rate for a trauma patient; hospitals and physicians covered receive 60% reimbursement of their charges.

In Ogden, Utah, a city 40 miles to the north of Salt Lake City, the two hospitals in the town each serve as trauma centers. They essentially treat all patients brought to them and refer out only severe burns to the University of Utah Hospital. Their patient load, however, represents only 200 patients a year together. Their payor/mix mirrors that of Salt Lake City and their only difference appears to be a slightly higher percentage of penetrating vs. blunt trauma which they ascribe as much to hunting accidents as to domestic and criminal violence.

Auto insurance is compulsory in the State of Utah and the perception is there is a minimal number of trauma patients who are indigenous

to the area who are not covered by some type of third-party payment system.

Malpractice

Malpractice actions per se are not recognized by the hospitals nor physicians as having an increased incidence with respect to the trauma patient. The University of Utah Hospital has sovereign immunity at a level of \$250,000/500,000.

The medical staff is also self-insured with the present pool approaching \$3 million and both pools have paid out a total of \$650,000 in claims over the past ten years. To protect against a challenge to the sovereign immunity, the University of Utah had increased excess insurance to the \$5 million level, but decided to cancel it when their insurance premium for that excess in the past five years went from \$40,000 per year to \$1.6 million. Physicians at LDS and Primary Children's Medical Center are insured through private insurance obtained through Utah Medical Society Insurance Company. Currently mature insurance premium for trauma surgeons in the state of Utah is approximately \$25,000 per year and for a neurosurgeon \$30,000 to \$35,000 per year for \$1-3 million coverage. The LDS hospital house officers and employed physicians, i.e., Intensivists, and Emergency Department physicians are covered under a hospital policy for medical malpractice.

In the area of tort reform, current state law has a two-year statute of limitations. A mandatory state review panel convenes when a suit is filed, consisting of physician, lawyer, citizen, and a judge in non-discoverable discussion. The case is reviewed by the panel, and if losing party wishes to file a suit or go into the court system, the results of the panel are not admissable at the trial. A provision of the state EMS law yields good samaritan protection to physicians and emergency medical personnel involved in pre-hospital and inter-hospital stabilization and transportation of patient within the

trauma network; this further applies to instructions given by physicians/nurses by telemetry, with the exception of gross negligence.

5.7 SITE VISIT
DADE COUNTY, FLORIDA

INTRODUCTION - FLORIDA/DADE

The State of Florida is located in the extreme southeast section of the United States on a large peninsula between the Atlantic Ocean and the Gulf of Mexico. The total land area of 54,136 square miles supports a population of 11,675,000 with an average population density of 210 residents per square mile. Eighty-five percent of the state's population live in an urban environment. Florida ranks 5th in population and 22nd in total land mass.

Of the total population, 83.9% are White and 13.7% are Black. Approximately 10% are Hispanic. Florida has experienced a net increase in population of 19.8% in the last six years. Per capita income is \$14,281 and unemployment is 5.7%.

Dade County is located in the southeast region of the State of Florida. It has a land area of approximately 2,000 square miles of predominantly sea level terrain with a population of approximately 1.9 million. It is bordered on the north by Broward County, on the South by Monroe County (the Florida Keys), on the east by the Atlantic Ocean and on the west by the Florida Everglades. Metropolitan Dade County government provides major municipal services, including Fire Rescue service, for a majority of the County including many of the incorporated municipalities. The major cities of Dade County are Coral Gables, Hialeah, Miami, and Miami Beach.

TRAUMA SYSTEM ISSUES

System Management

A trauma network was established in Dade County on September 1, 1985, with the approval of the Board of County Commissioners. As the chief regulatory body for Metropolitan Dade County government, the Board has final executive authority to approve or disapprove policies and/or recommendations concerning the trauma network. Supporting the County government are two advisory committees, the Trauma Network Committee and the Medical Advisory Committee.

The Medical Advisory Committee consisted of a physician from each participating Trauma Center, the Medical Directors of the five rescue systems, trauma nurse coordinators, a representative from non-trauma center hospitals and Fire Rescue officers. This group developed trauma triage criteria, reviewed medical issues, and appointed quality assurance subcommittees. There were three Quality Assurance subcommittees, one to review the overall performance of the network, a pre-hospital subcommittee, and an Air-Rescue subcommittee.

The Trauma Network Committee, composed of hospital administrators, reviewed administrative issues and recommendations from other committees to present to the County government. A final element of the system administration was the trauma registry, under contract with the County government.

Initially, seven hospitals applied for trauma center designation to the state government. All were verified, through an application process with six Level II (Baptist, Hialeah, Mercy, Mt. Sinai, South Miami, and Parkway Hospitals) and the University of Miami/Jackson Memorial Medical Center as the only Level I Trauma Center. Miami Children's Hospital applied for trauma center status later in the development of the system. It could not be verified by the state since provisions for Pediatric Trauma Centers were not contained in

State law. After an on-site visit, Miami Children's Hospital was approved as a participating hospital in the Trauma Network.

In Dade County, pre-hospital care and transportation is provided by five well-organized rescue systems. Dade County Fire Rescue provides services to unincorporated Dade County and 22 of the cities within the County. Four cities provide their own Fire-Rescue service including Coral Gables, Hialeah, Miami, and Miami Beach. Each rescue service has modern rescue units, three well-trained paramedics per unit, and good geographical distribution throughout the county. The pre-hospital element was one of the strongest elements of the Trauma Network.

Air Rescue service was financed using County tax dollars with one-time cash contributions from each participating trauma center. A modern state-of-the-art Bell Helicopter was provided and staffed. Criteria for the use of the Air Rescue Service were established by the Medical Advisory Committee, i.e., if ground transport of a trauma patient would exceed 20 minutes, then the helicopter was to be dispatched.

Initially, the system functioned well. All seven Trauma Centers and the Pediatric Referral Center were receiving patients, and both air and ground transportation systems were performing according to established protocols. The Medical Advisory Committee met monthly with excellent participation and utilized Trauma Registry statistical data regularly.

At the time of this report, there is only one verified trauma center providing services, University of Miami/Jackson Memorial Medical Center (UM/JMMC). All six Level II Trauma Centers have dropped out of the Trauma Network and did not reapply for reverification to the state. The Medical Advisory and Quality Assurance Subcommittees are not functioning. Recently enacted legislation authorizes county government to coordinate trauma care and the Board appears to be moving towards exercising its regulatory authority.

Initial triage criteria established by the Medical Advisory Committee were similar to those recommended by the American College of Surgeons. In reviewing registry data these criteria were found to significantly over-triage patients to the trauma centers. These criteria were then reduced in number from nineteen to six which appeared to more closely match traumatized patients with available facilities. There is no indication that patients needing services have been missed.

Presently, the five rescue services continue to use these six criteria to triage trauma patients to the only trauma center available in Dade County. One of the former Level II Trauma Centers in the south still takes trauma patients but only on a case-by-case basis and from a specific geographic area. Miami Children's Hospital also takes some pediatric trauma patients, but by July 1987, 90% of Dade County trauma patients were being transported to UM/JMMC. The trauma patient volume has increased steadily from approximately 300 patients in the month of January 1987 to 450 patients in the month of July 1987.

The Trauma Registry is operational and continues to collect data and provide reports that allow review of trauma issues.

It was recognized from the beginning that eight trauma centers would not be necessary in Dade County. Several Level II facilities were expected to drop out of the system; however, as previously mentioned all Level II hospitals eventually elected not to participate. Several major issues surfaced in review of the system.

Medical malpractice became a paramount issue. While no data is available confirming or rejecting the premise that indigent patients in a trauma setting are more likely to sue, there is sufficient anecdotal evidence to establish this major physician concern. Physicians interviewed clearly perceived that there is a likelihood

of being sued as a result of providing trauma care. A major contributor to participating hospitals withdrawal from the system was the withholding of emergency services by physician specialists.

A second major factor became the uncompensated care issue. Although hospitals and physicians treated any patient regardless of ability to pay, it is apparent that a negative impact was felt on the economic well being of the institutions. Physicians and hospitals faced with increasing costs, especially medical insurance for physicians, expressed that with the perceived likelihood of litigation the benefits were not equal to the risks.

In addition, initial-triage criteria were found to over-triage patients to trauma facilities which resulted in the two down-side consequences. One, the large volume resulted in stress within those facilities as private physicians and services competed for resources with trauma services; and two, certain areas were denied the services of fire rescue providers.

One hospital administrator stated that if the uncompensated care issue could be resolved, then that facility would, again, participate in a trauma system. Yet another hospital administrator felt that even with the uncompensated care issue resolved, the malpractice issue was unlikely to be solved and physicians would not participate. Reaction from personnel in two other hospitals was that they were doing fine without trauma, so they would not participate whether or not those issues were corrected.

Three trauma surgeons interviewed were eager to get back and take care of trauma patients. On the other hand several general surgeons perceived that their involvement with trauma cases resulted in an increased risk of malpractice claims.

Some of the physicians and administrators interviewed indicated that there was an insufficient number of physician specialists, i.e., neurosurgeons, cardiothoracic surgeons, vascular surgeons, and

orthopedic surgeons, to provide care to all of the trauma patients. Others indicated that these specialists may be less interested in taking care of major trauma victims. It was generally perceived that adequate compensation for patient care and reasonable malpractice premiums would lead to improvement in the availability of hospital trauma care.

PRE-HOSPITAL CARE/AIR AMBULANCE ISSUES

General Comments

This report will address Dade County as it operates its EMS System to facilitate Trauma Care. The governing statutes for EMS delivery in the State of Florida are F.S. 401, and Administrative Rules 10D-66. Dade County directly controls EMS through Chapter 4 of the Dade County Code. Although the recently enacted Trauma Care Act, Chapter 87-399, provides for the establishment of regional trauma agencies, currently one does not exist in this region of the state. Although local committees and advisory groups have input into EMS delivery, currently there is no formal agency structure to assume the total administrative direction of a system. The primary provider group providing inter-agency liason is a sub-committee of the Dade Chief Fire Officer's Association (DCFOA), the Paramedic Coordinating Council. Membership in the DCFOA is open to all providers in the pre-hospital and hospital groups, as well as other ancillary services. The five fire-rescue agencies operating in Dade County are active in the council and develop policies to standardize EMS delivery. The council is advisory only and does not have statutory power to dictate policy or establish directives unless all agencies are in agreement.

The five rescue agencies in Dade County are Coral Gables, Dade County, Hialeah, Miami, and Miami Beach Fire-Rescue. Each agency is autonomous and operates independently with a medical director, communications system, and specific service area.

The County Government is a county-manager type with the ruling body being a nine member County Commission. There are twenty-six municipalities and five separate fire-rescue jurisdictions, not including Homestead Air Force Base.

The County entered into a regional trauma system in 1985, and had as many as eight participating hospitals. Currently only University

of Miami/Jackson Memorial Medical Center, a Level I Trauma Center, and Miami Children's Hospital, a non-designated facility, are serving as trauma centers.

Training

Paramedic and Emergency Medical Technician training is primarily provided by Miami-Dade Community College, with a small percentage of students attending a private, proprietary teaching institution. The Community College provides both in-house and off-campus courses to accommodate the individual provider agencies. The training center must be approved by the State of Florida and receive American Medical Association approval.

The State requires continuing education for EMT and Paramedic recertification. This requirement may be met through in-house programs or through refresher programs taught at the college. Basic life support, advanced life support, and advanced trauma life support training courses are provided. Basic trauma life support courses are currently being developed. All training is certified by the EMS office of the State of Florida.

Training is primarily paid for by the sponsoring agency; however, the training may be paid for by the student.

Communications

Medical communications utilize the 10-channel MEDCOM UHF system with the exception of the City of Miami which operates an 800 Mhz trunking system. Private ambulance companies use the MEDCOM UHF system for Advanced Life Support inter-hospital transports and VHF for inter-company communications. There is a single access 9-1-1-E system; however, each department has its own discrete dispatch system. Communication systems are primarily funded by the agency which controls that segment of the system.

An attempt has been made in the past to develop a regional multi-agency communications system. Little progress has been made in this area, although there is some cooperation on base station and antenna locations.

Dispatch is provided by specially trained dispatchers, many of whom are certified EMT's. Dispatch training is provided by the individual agencies with internally developed protocols. After a period of apprenticeship, the dispatchers assume primary responsibility. Although each provider trains communications personnel in telephone first-aid assistance, the City of Miami is the only agency operating a modified priority dispatch system similar to the Salt Lake City model.

No specific system evaluation of the entire communication system has been conducted. Technical evaluations have been made to ensure reliable radio coverage. The radio installations in base hospital emergency departments in many cases are out-dated and need upgrading to state-of-the-art equipment.

Management

The authority for each pre-hospital system is primarily delegated through its own jurisdiction's elected officials. There is, however, a requirement for reporting to State EMS Office for certification. Reporting is not required to measure performance criteria.

Since the inception of the trauma system pre-hospital providers have noted a greater consistency of protocols and improved quality assurance activities (mostly in-hospital). Increased transit mileage was a concern at the inception of the trauma system; however, currently, medical care for trauma victims has been centralized at the one Level I trauma center with a small percentage of pediatric patients going to a non-designated pediatric trauma referral center.

The result has been increased air transport of trauma victims with ground units transporting less.

The medical standards for triage initially consisted of the American College of Surgeons guidelines and have since been heavily modified due to the high incidence of over-triage virtually crippling the system. Treatment and transportation standards are developed by the Medical Director for each provider service.

The pre-hospital system is indirectly involved in decision making for the trauma system. The Paramedic Coordinating Council is the general forum for addressing pre-hospital issues. At the present time there are no current standing committees to provide input and it is felt that such committees should be developed.

Transportation

Transportation is provided through a two-tiered system. First response advanced life support services are provided by the fire-rescue providers and basic life support services by the private providers. Fire-rescue agencies may provide basic life support transportation services under certain circumstances. One private Advanced Life Support system under city contract is currently operating in a small section of the City of North Miami Beach.

All ground and air, advanced and basic life support providers, are licensed and regulated by the State of Florida and Dade County. These regulations include strict vehicle licensing standards as well as personnel certification requirements; however, no performance criteria are specifically stated in the rules.

Air ambulance services are provided by Dade County Fire-Rescue, and to a lesser extent by the United States Coast Guard.

Average response time in the cities averages four minutes and in the county 90% of responses are less than six minutes.

Three paramedics respond on all fire-rescue units in Dade County. The air rescue unit responds with two pilots and two paramedics. There is very good integration between ground and air units, and it is not necessary for ground unit paramedics to accompany patients when they are transferred by helicopter. Air ambulance services may be requested by the on-scene paramedic or through the approval of the Fire Department dispatch supervisor.

Patients are billed for air and ground transportation services. The average charge for air ambulance services is \$1,350 and \$150 for ground transport. The specific costs vary with the individual provider agencies and the level of service rendered.

During the life of the trauma system, changes have been primarily secondary to the centralization of services which has resulted in improved quality of care to trauma patients and standardization of major trauma protocols.

Reporting

There is uniform reporting to a county-wide trauma registry. All ambulance-run forms of trauma patients are collected by the trauma registry and each jurisdiction collects run forms for non-trauma victims. There is an extensive series of reports generated through the analysis by the trauma registry. There is minimal quality assurance reporting back to the specific rescue services.

Triage Criteria

The triage criteria combine physiologic parameters, mechanism of injury, and specific anatomical criteria. Current criteria are:

- A. Systolic BP < 90
- B. Glasgow Coma Score < 12
- C. Paralysis
- D. Major Burns (> 20% second and/or third degree)
- E. Penetrating injury to the head, neck, torso, or groin.
- F. High index of suspicion for significant injury based on mechanism of injury and/or paramedic judgement.

The criteria were established by the Medical Advisory Committee; however, there is no current evaluation of triage criteria except by the individual medical directors of each service. Triage criteria have been changed during the life of the system primarily in the form of modifications downward from the full ACS guidelines. At the present time criteria are much more narrow. Analysis of under- and over-triage is currently being evaluated in a very systematic fashion by the trauma registry.

Summary

The Dade County pre-hospital system is integrated, functional, and well established. Although five different agencies provide emergency medical services, a high level of mutual cooperation, coordination, and support exists. While initial EMT and Paramedic training is viewed as very good, the lack of input and involvement by

other health care providers (Emergency and Trauma MD's, RN's, Respiratory Therapists, etc.) limits the educational sophistication and professionalism of personnel. The long-term effect is that the development of a "cooperative spirit" and mutual respect between pre-hospital and hospital (ED) personnel is hindered. The paramedic training program is developing a formalized, structured field internship program which will enhance the paramedics educational experience.

The present communications system is felt to be functional and efficient with proposed conversion to an 800 Mhz trunking type system as a desirable goal.

The lack of a central coordinating EMS authority inhibits the growth, development, and operation of a Dade County Trauma System.

The Transport System as it exists is felt to be exceptional.

Reporting and trauma registry issues are handled in a very comprehensive manner. Review and evaluation of registry reports and integrating reports with quality assurance activities are lacking and should be improved. All triage criteria changes have been directed toward reduction of over-triage of trauma victims and as the result of these changes there is some concern that the margin for potential under-triage has been widened.

Subjective interpretation of some trauma criteria and the refusal by non-trauma hospitals to treat many non-criteria victims of injury are taxing the resources of the Level I Trauma Center and pre-hospital providers. Overall, the pre-hospital system is considered highly functional.

SYSTEMS EVALUATION/QUALITY ASSURANCE ISSUES

The Dade County Trauma Registry (DCTR), an independent agency under contract with Metropolitan Dade County, serves as the central source for all trauma data within the county. The DCTR receives input from the pre-hospital care providers, trauma centers, and the Dade County Medical Examiner's Office. This information is collated and summary reports are generated back to all participants as well as the Dade County Commission and the County Manager.

Pre-hospital QA is achieved via the Paramedic Coordinating Council. This council is made up of the five rescue chiefs of the systems serving Dade County who convene to discuss problems with the delivery of pre-hospital care. The director of the DCTR attends the monthly meetings and provides data for review.

Each of the trauma centers is responsible for its own QA activities. These are usually accomplished by the trauma rounds and trauma Morbidity and Mortality conferences. The Level I facility completed a preventable death study in 1982 (pre-network) and is currently duplicating the study to evaluate the effectiveness of the trauma care system. There is a mandatory postmortem review for all traumatic and suspicious deaths in Dade County.

While the above text describes the Dade County Trauma Network today, several changes occurred during system development. At the inception of the network, a Medical Advisory Committee (MAC), comprised of the Chief of Trauma from each participating trauma center, the Medical Director from each fire rescue System, the director of the DCTR, a representative from the non-trauma hospitals, a member of the county manager's office and several county support staff, was formed to oversee the medical concerns of the system. This included data review from the registry office and review of triage criteria. A quality assurance sub-committee was formed with the responsibility of reviewing, in-depth, certain

trauma cases. Prior to the dissolution of the original Trauma Network, the committee met once and was in the process of determining identifiers for case review.

The remaining trauma center (UM/JMMC) conducts its own internal quality assurance program.

UNCOMPENSATED CARE, TORT CLAIM LIABILITY
AND
MALPRACTICE INSURANCE ISSUES

At the outset of the Trauma System in Dade County, the hospitals "voluntarily" verified themselves as trauma centers and contributed \$100,000 each to fund the helicopter and other start-up costs.

From its inception, the two issues identified as potential problems were uncompensated care and malpractice. However, the hospitals felt that these concerns were outweighed by the perceived benefits derived from joining the system.

Uncompensated Care

Hospitals estimated uncompensated care would account for approximately 25% - 30% of the trauma cases. The actual percentage was 60% - 65% including a high percentage of uninsured motorists. The requirement for maintaining auto insurance coverage is not enforced in Dade County, consequently, the percentage of uninsured trauma victims with injuries resulting from vehicular accidents is 65%.

Funding for indigent care was actually non-existent from the State and only University of Miami/Jackson Memorial Medical Center (UM/JMMC) received monies for indigent care from the county. When attempts were made to transfer indigent patients to UM/JMMC, the County hospital, patients were not accepted due to over-crowding.

Due to the inability to transfer indigent patients, the hospitals payor mix changed dramatically. The hospitals, with bad debt mounting directly in response to trauma and no monies available to offset losses, were forced to withdraw from the Network. The financial impact reported by the hospitals ranged from \$6-9 million

in indigent care of which \$900,000 to \$3.5 million was directly attributed to trauma.

While representatives from all hospitals agreed that funding from some source must be available to ensure the viability of the Network, the hospital administrators opposed the use of the Indigent Care Fund to be diverted to trauma care. They felt strongly that a "state tax and not a hospital tax" should pay for trauma care in Florida.

Medicaid funding as an alternate source was so compromised as to negate its effectiveness as a method of reimbursement. Although revisions were made as of October 1987, it was felt that:

1. Compensation is still below the cost of trauma to hospitals and far below the 60% customary physicians' charges.
2. Difficulty in enrollment is still present.
3. No provision exists for retroactive funding for qualified patients. This is particularly significant to trauma cases where the initial period of care is more cost-intensive.

Five hospitals reported paying physicians for trauma services with general surgeons retained for full-time coverage at rates ranging from \$300 to \$500 per day and neurosurgeons compensated at various levels of payment.

*NOTE: The teaching hospitals did not pay physicians. It was stated that in non-teaching hospitals, private doctors should not have to bear the full brunt of taking care of unscheduled indigent trauma patients without compensation and then be expected to take care of their scheduled patients.

Malpractice

The atmosphere in Dade County for both doctors and hospitals is "fear of being sued." Both the hospitals and doctors, from the inception of the Network, were asked to assume both the risk and the cost of malpractice. UM/JMMC and its physicians are buffered by the fact that there is a cap on malpractice claims as they are a county-owned hospital and have sovereign immunity.

A physician from one of the non-teaching hospitals felt that trauma care in Dade County is probably in worse condition today than prior to the inception of the Trauma Network. He attributed this to the difficulty in obtaining surgical sub-specialty insurance coverage in the Emergency Department. Premiums for neurosurgical coverage average \$150,000 to \$180,000 annually for \$250,000 in liability limits. No higher coverage is available at any rate. Thoracic surgeons averaged \$130,000-\$160,000 for \$250,000 limits and general surgeons averaged \$50,000-\$60,000 for \$500,000 limits. A similar situation appears to be developing for orthopedic surgeons.

Physicians from two hospitals stated that trauma is perceived to be a high risk specialty and private physicians who have minimum coverage or no coverage have chosen to manage their risk and not accept emergency department calls. Most emergency department cases are perceived to be "high risk." They felt that trauma was not the main issue, but was being "held hostage" in order to address the larger malpractice concerns in South Florida.

Conclusion

The consensus was that the Network must be well-organized and structured with the State establishing the methodology to provide administration at the Regional or County level, with state-wide funding and the designation of Trauma Centers. Those hospitals so designated must be committed to the Network and limited in number

to assure both the availability and the expertise for trauma care. With a limited number of hospitals committed and capable of delivering trauma care, the two issues of uncompensated care and malpractice protection can more easily be addressed.

In summary, representatives from all hospitals stated that unless acceptable funding is available for uncompensated and undercompensated care, and malpractice premiums are available at affordable rates and limits; they would not re-enter the Trauma Network.

**6.1 STATE OF FLORIDA TRAUMA CARE
ACT**

CHAPTER 87-199

Committee Substitute for Senate Bill
Nos. 1098 and 296

An act relating to hospitals; amending s. 119.07, F.S.; providing exemptions from public records act; amending s. 395.017, F.S.; granting access to patient records; amending s. 395.031, F.S.; relating to trauma centers and pediatric trauma referral centers; providing definitions; requiring local and regional trauma agencies to develop a trauma medical services system plan for review and approval by the Department of Health and Rehabilitative Services; providing plan components; requiring a public hearing prior to submission of such plan to the department for approval; requiring trauma centers to accept all trauma victims; prohibiting a facility that is not verified as a trauma center from holding itself out as such; providing for a county ordinance; requiring an annual update of the plan; providing for verification of hospital trauma centers; creating s. 395.032, F.S.; authorizing the department to define trauma regions for the state; providing criteria; requiring the department to develop regional trauma systems plans and specifying components; providing standards for the verification of trauma centers; requiring hospitals to request verification as a trauma center; prescribing contents of the application; providing for renewal of verification; establishing requirements for the operation of a trauma center; providing for the collection and deposit of fees; requiring trauma victims be identified and transported according to department-approved protocol; requiring certain hospitals to furnish certain trauma registry data; providing for reverification as a trauma center; creating s. 320.0801, F.S.; providing an additional vehicle license fee; providing for deposits into the Emergency Medical Services Trust Fund; requiring the Hospital Cost Containment Board and the department to make studies and reports on trauma care; requiring the department to develop a plan for air medical evacuation services; enabling the department to utilize the Emergency Medical Services Trust Fund for the purposes of this act; providing an effective date.

Be It Enacted by the Legislature of the State of Florida:

Section 1. This act may be cited as the "Trauma Care Act."

Section 2. Paragraph (x) is added to subsection (3) of section 119.07, Florida Statutes, 1986 Supplement, to read:

119.07 Inspection and examination of records; exemptions.--

(3)

(x) A patient record obtained by the Department of Health and Rehabilitative Services or its agent pursuant to s. 395.031 from a hospital, which record contains the name, residence or business address, telephone number, social security or other identifying number, or photograph of any person or the spouse, relative, or guardian of such person or which record is patient-specific or otherwise identifies the patient, either directly or indirectly, is exempt from the provisions of subsection (1).

Section 3. Subsection (3) of section 395.017, Florida Statutes, is amended to read:

395.017 Patient records; copies; examination.--

(3) Patient records shall have a privileged and confidential status and shall not be disclosed without the consent of the person to whom they pertain, but appropriate disclosure may be made without such consent to:

(a) Hospital personnel for use in connection with the treatment of the patient;

(b) Hospital personnel only for internal hospital administrative purposes associated with the treatment;

(c) The Hospital Cost Containment Board; or

(d) In any civil or criminal action, unless otherwise prohibited by law, upon the issuance of a subpoena from a court of competent jurisdiction and proper notice by the party seeking such records to the patient or his legal representative;

(e) The Department of Professional Regulation upon subpoena issued pursuant to s. 455.223, but the records obtained thereby shall be used solely for the purpose of the Department of Professional Regulation and the appropriate professional board in its disciplinary proceedings. The records shall otherwise be sealed and shall not be available to the public pursuant to s. 119.07 or any other statute providing access to records; or

(f) The department or its agent, for the purpose of establishing and maintaining a trauma registry and for the purpose of ensuring that hospitals are in compliance with the standards of s. 395.031(5).

Section 4. Section 395.031, Florida Statutes, is amended to read:

(Substantial rewording of section. See s. 395.031, F.S., for present text.)

395.031 Trauma medical services system plans; verification of trauma centers and pediatric trauma referral centers; procedures; renewal.--

(1) For the purposes of this section, the term:

(a) "Department" means the Department of Health and Rehabilitative Services.

(b) "Local or regional trauma agency" means an agency established and operated by the county, an entity with which the county contracts for the purposes of local trauma medical services administration, or a regional agency created for the administration of trauma medical services by agreement between counties.

(c) "Trauma center" means any hospital that has been determined by the department to be in substantial compliance with trauma center verification standards.

(d) "Pediatric trauma referral center" means a hospital that is determined to be in substantial compliance with pediatric trauma referral center standards as established by rule of the department pursuant to subsection (5).

" (e) "Trauma scorecard" means a statewide methodology adopted by the department by rule under which a trauma victim is graded as to the severity of his injuries or illness and which methodology is used as the basis for making destination decisions.

(f) "Trauma victim" means any person who has incurred a single or multisystem life-threatening injury due to blunt or penetrating means and who requires immediate medical intervention or treatment.

(2)(a) The local or regional trauma agency shall plan, implement, and evaluate a trauma medical services system, in accordance with this act, which consists of an organized pattern of readiness and response services based on public and private agreements and operational procedures.

(b) The local or regional trauma agency shall develop and submit to the department for review a plan for a local or regional trauma medical services system. The plan must include, at a minimum, the following components:

1. The organizational structure of the trauma system.
2. Prehospital care management guidelines for triage and transportation of trauma cases.
3. Flow patterns of trauma cases and transportation system design and resources, including air transportation services, and provision for interfacility transfer.
4. The number and type of major trauma cases necessary to assure that trauma centers will provide quality care to trauma cases referred to them.
5. The resources and equipment needed by trauma facilities to treat trauma cases.
6. The availability and qualifications of the health care personnel, including physicians and surgeons, who comprise the trauma teams that treat major trauma cases within a trauma facility.
7. Data collection regarding system operation and patient outcome.
8. Periodic performance evaluation of the trauma system and its components.
9. The utilization of air transport services within the jurisdiction of the local trauma agency.
10. Public information and education about the trauma system.
11. Emergency medical services communication system usage and dispatching.
12. The coordination and integration between the verified trauma care facility and the nonverified health care facilities.
13. Medical control and accountability.
14. Quality control and system evaluation.

(c) The department shall receive plans for the implementation of trauma care systems from local or regional trauma agencies. The department may approve or not approve the local or regional plans based on the conformance of the local or regional plans with this act

and the rules adopted by the department pursuant to this act. A local or regional trauma agency may implement the local plan developed pursuant to this act unless the department determines that the plan does not effectively meet the needs of the persons served and is not consistent with applicable rules of the department.

(d) The department may grant an exception to a portion of the rules adopted pursuant to this act if the local or regional trauma agency proves that, as defined in the rules, compliance with that requirement would not be in the best interest of the persons served within the affected local trauma area.

(e) A local or regional trauma agency may implement a trauma care system only if the system meets the minimum standards set forth in the rules for implementation established by the department and if the plan has been submitted to, and approved by, the department. Before the local or regional trauma agency submits the plan for the trauma care system to the department, the agency shall hold a public hearing and give adequate notice of the public meeting to all hospitals and other interested parties in the area proposed to be included in the system.

(f)1. At the option of a local or regional trauma agency which is implementing a trauma care system approved by the department, the department may delegate to the local or regional trauma agency the hospital trauma center verification process within the geographic boundaries of the local or regional trauma agency.

2. For those local or regional trauma agencies selecting to verify hospital trauma centers, the direct or indirect cost of verification shall be borne by the applicant, based on a fee schedule set up by the local or regional trauma agency; however, a fee may not exceed the reasonable cost of implementation, operation, maintenance, evaluation, and development of the verification process.

(g) Local or regional trauma agencies shall contract only with hospitals with verified trauma centers or those willing to seek verification.

(h) Local or regional trauma agencies providing service for more than one county shall, as part of their formation, establish interlocal agreements between or among the several counties in the regional system.

(i) This section does not restrict the authority of a health care facility to provide service for which it has received a license pursuant to chapter 395.

(j) Any hospital which is verified as a trauma center and has a contract with a local or regional trauma agency shall accept all trauma victims that are appropriate for the facility regardless of race, sex, creed, or ability to pay.

(k) It is unlawful for any hospital or other facility to hold itself out as a trauma center unless it has been so verified.

(l) A county, upon the recommendations of the local or regional trauma agency, may adopt ordinances governing the transport of a patient who is receiving care in the field from prehospital emergency medical personnel, when the patient meets specific criteria for trauma, burn, or pediatric centers adopted by the local or regional trauma agency. These ordinances shall, to the furthest possible extent, ensure that individual patients receive appropriate medical care while protecting the interests of the community at large by making maximum use of available emergency medical care resources.

(m) The local or regional trauma agency shall, consistent with such plan, coordinate and otherwise facilitate arrangements necessary to develop a trauma medical services system.

(n) After the submission of the initial trauma care system plan, a local or regional trauma agency which has implemented a trauma care system shall annually submit to the department an updated plan which identifies the changes, if any, to be made in the trauma care system.

(o) This section does not preclude a local or regional trauma agency from adopting trauma care system standards or trauma facilities standards that are more stringent than those adopted by rule of the department.

(3) Any hospital licensed in the state that desires to be verified as a trauma center or as a pediatric trauma referral center must submit to the department, or to the appropriate local or regional trauma agency, a request for verification as such a center. The request shall be reviewed by the department or the local or regional trauma agency to determine whether the hospital is in substantial compliance with the standards specified in subsection (5). Within 30 days after receiving a request from a hospital for verification as a trauma center or pediatric trauma referral center, the department or the local or regional trauma agency shall notify the hospital of any apparent errors or omissions in its application and shall request any additional information necessary to determine the hospital's substantial compliance with this section and department rules. This additional information must be submitted within 60 days after the hospital's receipt of the request for additional information. Upon receipt of the additional information from the hospital, the department or the local or regional trauma agency shall deem the application to be complete. An application must be approved or denied within 90 days after receipt of the original application or receipt of documentation that apparent errors or omissions have been corrected. Upon determining that the hospital is in substantial compliance with the standards, the hospital shall be verified as a trauma center or pediatric trauma referral center. If the application is denied, the hospital must be notified of any right to a hearing pursuant to chapter 120.

(4) A verification, unless sooner suspended or revoked, automatically expires 2 years from the date of issuance and is renewable biennially upon application for renewal, provided the hospital is in substantial compliance with trauma center or pediatric trauma referral center verification standards in effect at the time of application. An application for renewal shall be processed in the same manner as prescribed for initial applications, except that the application must be made at least 120 days prior to expiration of the verification, on a form provided by the department or the appropriate local or regional trauma agency.

(5) The department shall adopt, by rule, standards for verification of trauma centers based on national guidelines, including those established by the American College of Surgeons, entitled "Hospital and Prehospital Resources for Optimal Care of the Injured Patient," and published appendices thereto. Standards specific to pediatric trauma referral centers shall also be adopted by rule of the department.

Section 5. Section 395.032, Florida Statutes, is created to read:

395.032 State regional trauma planning; trauma regions.--

(1) The department may establish trauma regions in those geographical areas where there are no department-approved local or

CODING: Words stricken are deletions; words underlined are additions.

regional trauma system agencies and plans and where the department determines there is need for organized trauma services for the residents of the geographical area. The department shall base its definition of the regions upon:

- (a) Geographical considerations so as to ensure rapid access to trauma care by patients;
- (b) Historical patterns of patient referral and transfer in an area;
- (c) Inventories of available trauma care resources;
- (d) Predicted population growth characteristics;
- (e) Transportation capabilities, including ground and air transport;
- (f) Medically appropriate ground and air travel times; and
- (g) Other appropriate criteria.

(2) The department shall develop trauma systems plans for the department-defined trauma regions which include at a minimum, the following components:

- (a) The organizational structure of the trauma system.
- (b) Prehospital care management guidelines for triage and transportation of trauma cases.
- (c) Flow patterns of trauma cases and transportation system design and resources, including air transportation services, and provision for interfacility transfer.
- (d) The number and type of trauma cases necessary to assure that trauma facilities will provide quality care to trauma cases referred to them.
- (e) The resources and equipment needed by trauma facilities to treat trauma cases.
- (f) The availability and qualifications of the health care personnel, including physicians and surgeons, who treat trauma cases within a trauma facility.
- (g) Data collection regarding system operation and patient outcome.
- (h) Periodic performance evaluation of the trauma system and its components.
- (i) The utilization of air transport services within the service region.
- (j) Public information and education about the trauma system.
- (k) Emergency medical services communication system usage and dispatching.
- (l) The coordination and integration between the designated trauma care facility and the nondesignated health care facilities.
- (m) Medical control and accountability.

(n) Quality control and system evaluation.

(3) The department shall adopt, by rule, standards for the verification of trauma centers based on national guidelines, including those established by the American College of Surgeons, entitled "Hospitals and Prehospital Resources for Optimal Care of the Injured Patient," and published appendices thereto. The department shall also adopt by rule standards specific to pediatric trauma referral centers.

(4) In those geographical areas where the department determines the need for trauma services, any hospital that desires to be verified as a trauma center must submit to the department a request for verification as such center. The request shall be reviewed by the department to determine whether the hospital is in substantial compliance with the standards specified in subsection (3). Within 30 days after receiving a request from a hospital for verification as a trauma center, the department shall notify the hospital of any apparent errors or omissions in its application and shall request any additional information necessary to enable the department to determine the hospital's substantial compliance with this section and the rules of the department. This additional information must be submitted to the department within 60 days after receipt of the request from the department. Any application must be approved or denied within 90 days after receipt of the original application or receipt of documentation that apparent errors or omissions have been corrected. Upon determining that the hospital is in substantial compliance with the standards, the department shall verify the hospital as a trauma center. If the department denies an application, the hospital must be notified of any right to a hearing pursuant to chapter 120. If a hospital does not desire to contest the findings of the department but continues to desire to be verified as a trauma center, the hospital shall be given 90 days in which to come into substantial compliance with the standards specified in subsection (3). After verification of compliance with those standards, the department shall verify the hospital as a trauma center.

(5) A verification, unless sooner suspended or revoked, automatically expires 2 years after the date of issuance and is renewable biennially upon application for renewal and payment of the fee prescribed in the rules of the department, if the hospital is in substantial compliance with trauma center verification standards in effect at the time of the application. An application for renewal shall be processed in the manner prescribed for initial applications, except that the application must be made at least 120 days prior to expiration of the verification, on a form provided by the department.

(6) Any hospital which is verified as a trauma center shall accept all trauma victims that are appropriate for the facility regardless of race, sex, creed, or ability to pay.

(7) It is unlawful for any hospital or other facility to hold itself out as a trauma center unless it has been so verified under this section by the department.

Section 6. Each emergency medical services provider licensed under chapter 401 shall transport trauma victims to hospitals verified as trauma centers, except as may be provided for either in department approved local or regional trauma transport protocol or, if no local or regional trauma transport protocol is in effect, as provided for in a department-approved provider's trauma transport protocol. Development of regional trauma protocols shall be through consultation with interested parties, including, but not limited to, each verified trauma center in the region; physicians specializing

in trauma care, emergency care, and surgery; trauma system administrators; and emergency medical service providers licensed under chapter 401. Trauma victims shall be identified through the use of a trauma scoring system. The department shall specify by rule the subjects to be included in an emergency medical service provider's trauma transport protocol and shall approve or disapprove each such protocol.

Section 7. Each trauma center shall furnish and all hospitals shall allow for department review of trauma registry data as prescribed by rule of the department for the purpose of monitoring patient outcome and ensuring compliance with the standards of verification. Other hospitals may participate in the registry at their option. Patient care quality assurance proceedings, records, or reports made pursuant to this act shall be held confidential within the hospital and the department and shall not be available to the public pursuant to s. 119.07 or any other law providing access to public records, or be discoverable or admissible in any civil or administrative action. A person in attendance at such proceedings may not be required to testify as to what transpired at the meeting.

Section 8. Any hospital that is verified as a trauma center when this act takes effect shall be verified as a trauma center on that date, if it certifies to the Department of Health and Rehabilitative Services that it is in substantial compliance with the standards specified for trauma care in s. 395.031(5). Any hospital verified accordingly shall, if it desires to remain verified, apply for reverification at least 120 days prior to that date that its verification as a trauma center expires.

Section 9. Section 320.0801, Florida Statutes, is created to read:

320.0801 Additional license tax on certain vehicles.--In addition to the license taxes specified in s. 320.08, there is hereby levied and imposed an annual license tax of 10 cents for the operation of a motor vehicle, as defined in s. 320.01, and moped, as defined in s. 316.003(2), which tax shall be paid to the department or its agent upon the registration or renewal of registration of the vehicle. Notwithstanding the provisions of s. 320.20, revenues collected from the tax imposed in this section shall be deposited in the Emergency Medical Services Trust Fund created in s. 401.34(4) and used solely for the purpose of carrying out the provisions of this act, including the cost of contracting with local or regional trauma agencies.

Section 10. (1) The Hospital Cost Containment Board shall conduct a special study of trauma care services available in hospitals in this state. The study shall determine all costs, charges, net revenues, and expenses associated with trauma care programs by individual hospitals. The study shall rigorously evaluate documentation of cost shifting and cross-subsidization associated with trauma care, including the extent to which ancillary services provided to trauma patients subsidize the direct and indirect costs associated with the operation of trauma centers. The study shall provide specific data-based recommendations with regard to funding required for state-sponsored trauma patients in order to reimburse direct costs associated with their care and transportation.

(2) The Hospital Cost Containment Board and the Department of Health and Rehabilitative Services shall cooperate in the development of the studies required by this section. The reports shall be submitted by December 1, 1988, to the Governor, the President of the Senate, the Speaker of the House of Representatives, and the chairmen of the appropriations committees and the health and rehabilitative services committees of the Senate and the House of Representatives.

Section 11. The Department of Health and Rehabilitative Services, in consultation with state and local law enforcement agencies, shall develop a plan for an air medical evacuation service in areas not adequately served by either public or private agencies and to complement existing services in other areas. The plan shall be submitted to the chairmen of the legislative committees on health and rehabilitative services by January 1, 1988.

Section 12. For the 1987-1988 fiscal year, there is hereby appropriated \$1,203,373 from the Emergency Medical Services Trust Fund within the Department of Health and Rehabilitative Services, and 12 positions within the Department of Health and Rehabilitative Services are hereby authorized, to implement the provisions of this act.

Approved by the Governor July 14, 1987.

Filed in Office Secretary of State July 14, 1987.

* This publication was produced at a base cost of \$19.02 per page *
* for 1500 copies or \$.0126 per single page for the purpose of *
* informing the public of Acts passed by the Legislature. *

6.2 AMERICAN COLLEGE OF SURGEONS TRAUMA GUIDELINES

Appendix F to the Hospital Resources Document: Field categorization of trauma patients (field triage)

by the Committee on Trauma of the American College of Surgeons

Triage is the classification of patients according to medical need. There are three applications of this process in early management of the trauma patient: 1) field triage; 2) interhospital triage to specialized care facilities; 3) mass casualty triage.

Field triage of trauma patients in everyday emergency medical services operations involves an estimation of injury severity at the scene of the accident and the subsequent matching of patient needs with available resources. Patients with a high severity of injury who are at risk of dying from their injuries are identified for prompt definitive care at appropriately staffed and equipped facilities. (Whenever possible, these should be trauma centers.)

The number of patients who, because of injury severity, require care at Level I or Level II trauma centers, is but a fraction of all patients hospitalized each year for major trauma. In 1983, approximately 3.75-million patients were hospitalized for injury. In the same year, a study revealed 450 patients per million had an Injury Severity Score (ISS) of 15 or more, accounting for only 5.7 percent of all patient discharges.

Only 8.9 percent of the patients had severities greater than ISS 10, which incorporates just one serious body injury. Even with high overtriage rates, it is unlikely that the number of patients entering trauma centers will exceed 1,000 per million per year.

It is a substantial challenge for field personnel to identify that small proportion of patients who require prompt access to definitive care. Furthermore, time is critical. Fifty to 60 percent of trauma victims who are going to die do so before reaching a hospital. Of the remaining who die in-hospital, about 60 percent do so within the first four hours.

Factors that must be considered in field triage are:

- The actual or potential level of severity of the injury.
- The range of regional resources available to treat the patient.
- Time and distance factors.

Assessment of injury severity. For the purpose of field triage, assessment of the patient's severity of injury is based on examination of the patient for:

- Abnormal physiologic signs.
- Obvious anatomic injury. Since lethal torsal injuries are difficult to identify, it is essential to determine the mechanism of injury so that a knowledge and estimate of the forces applied to the body can provide some guidance to the potential presence of significant injury that is not yet evident through changes in vital signs.
- Concurrent disease or factors that might sharply worsen a patient's prognosis, even in the

**"The triage decision
determines the level, pace,
and intensity of initial
management of the major or
multiple trauma patient."**

presence of only moderately severe injury.

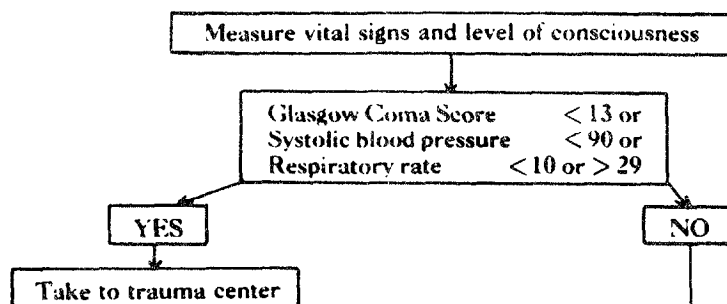
A triage decision scheme based on current scientific knowledge is contained in Table 1.

Medical control. The triage decision determines the level, pace, and intensity of initial management of the major or multiple-system trauma patient. The vast majority of trauma deaths occur within a few hours of injury (60% of those who die do so within four hours). The triage decision is often germane to patient survival or death. It is for this reason that the highest available level of medical expertise should be brought into the triage decision-making process. Usually this will involve advice and guidance from local emergency department physicians, who provide physician medical control to prehospital personnel at the accident scene. On-line physician medical control is of vital importance in emergency medical systems for the trauma victim. Surgeons, emergency physicians, and prehos-

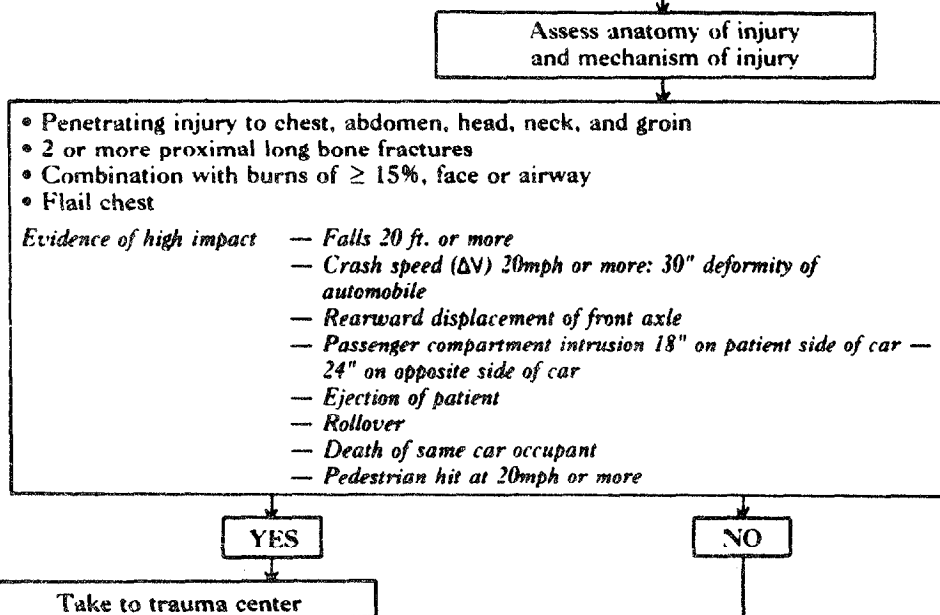
CARING FOR THE INJURED PATIENT

Table 1
Triage Decision Scheme

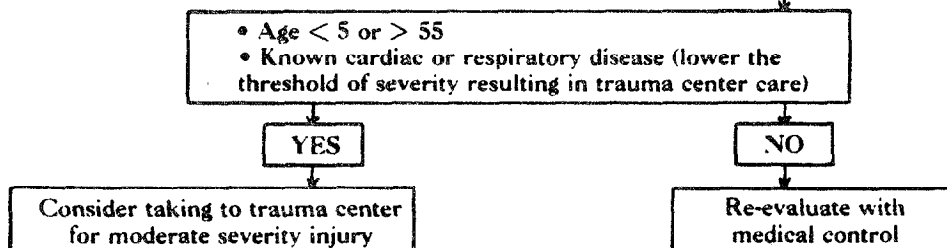
STEP 1



STEP 2



STEP 3



WHEN IN DOUBT TAKE PATIENT TO A TRAUMA CENTER

APPENDIX F

hospital-care personnel should work together to develop prehospital triage protocols for trauma patients. In most instances of triage based on potentially severe injuries, the patient is unable to make an informed decision in selecting appropriate hospital care. The "system" is often responsible for this decision. The system must, therefore, make surrogate decisions. In no instance may these decisions prejudice patient outcome. Disposition decisions at the scene must be made with the patient's interests and needs paramount.

Range of resources; time and distance factors. Both the level of available hospital resources and time and distance factors are also considered in making the triage decision. It must be recognized that Level I through III trauma centers are stratifications in a continuum of intensity of commitment to trauma-patient care. The system for trauma triage in an urban environment is considerably different from that in a rural environment. In the latter case access to any level of trauma care may involve significant distance and time.

Each region must, therefore, structure a trauma system in a manner that ensures the most prompt access to appropriate care and minimizes the risk

of delay in diagnosis, delay in surgical intervention, and inadequately focused care, which are responsible for most of the preventable deaths from trauma.

Urban triage. In most urban communities in the United States, prompt access to a Level I or Level II trauma center should be feasible within 30 minutes of activation of the emergency medical services (EMS) system response. Many urban populations have more than reasonable access to sophisticated care because of the distribution of tertiary care hospitals that function as Level I trauma centers. Other hospitals that do not offer this level of care or commitment should be bypassed in favor of access to a Level I or Level II trauma center.

Rural triage. In the rural environment, an injured patient may be at substantial distances from Level I or Level II trauma centers. Such patients should ideally be treated initially at the nearest available hospital facility. It is desirable that such a facility meets the requirements of a Level III trauma center or at least has emergency staff trained in advanced trauma life support. Patients with major injuries should then be secondarily triaged to more distant Level I or II trauma centers, should local resources prove inadequate for continued care (see Table 2).

Notes to Table 1:

1) Physiologic status thresholds are values of the Glasgow Coma Score, blood pressure, and respiratory rate from which further deviations from normal are associated with less than a 90 percent probability of survival. Used in this manner prehospital values can map into the admission trauma score and the quality assessment process.

A variety of physiologic severity scores have been used for prehospital triage and have been found to be accurate, but those contained in the triage guidelines are the simplest to perform, and provide an accurate basis for field triage based on physiologic abnormality.

2) Even in the presence of normal physiology, it is important to evaluate the likely presence of injuries that should be treated in a trauma center. A patient who has normal vital signs at the scene of the accident may still have serious or lethal injury. Accurate diagnosis of life-threatening injury at the accident scene is usually unlikely. Thus, it is essential to look for indications that significant forces were applied to the body.

3) Evidence of damage to the automobile can be a helpful guideline to the change in velocity (ΔV). The relationship between ΔV is such that 90 percent of patients with ISS greater than 15 have been

in an accident with ΔV of 20mph or more. ΔV can be estimated by a rule of thumb that vehicular deformity of 1 inch approximates 1mph ΔV . However, if contact diameter is less than one foot, then 1½ inches deformity approximates 1mph.

4) Certain other factors that might lower the threshold at which patients should be treated in trauma centers must be considered in field triage. These include: **Age.** Patients over age 55 have an increasing risk of death from even moderately severe injuries. Those of less than five years of age have certain characteristics which may merit treatment in a trauma center with special resources for children. **Comorbid factors.** The presence of significant cardiac or respiratory disease are also factors that may merit the triage of patients with moderately severe injury to trauma centers.

5) It is the general intention of these triage guidelines to select patients with an Injury Severity Score of 15 for trauma-center care. Patients with this level of Injury Severity Score have at least a 10 percent risk of dying from a single severe injury or multiple serious injuries. When there is doubt, the patient is often best evaluated in a trauma center.

CARING FOR THE INJURED PATIENT

Just as the Level II trauma center provides optimum care for most communities across the country, the importance of the Level III trauma center cannot be overemphasized. Between rural and urban environments, there are geographic areas

with increasing distances between hospitals and decreasing population density. Initial triage to a Level III trauma center may be preferred to primary patient transport from the scene to an urban tertiary care referral center more than 30

Table 2

INTERHOSPITAL TRIAGE CRITERIA

The following list identifies patients at a particularly high risk of dying from multiple and severe injuries. Ideally, such patients should be treated in a high level trauma center where continued exposure to such problems by multidisciplinary team systems may afford a patient an optimum outcome. Such patients should be considered for transfer to high level centers wherever possible.

Central Nervous System

- Head injury • Penetrating injury
 - Depressed skull fracture
 - Open injury
 - CSF leak
 - Severe coma (GCS < 10)
 - Deterioration in GCS of 2 or more
 - Lateralizing signs
- Spinal cord injury

Chest

- Wide superior mediastinum
- Major chest wall injury
- Cardiac injury
- Patients who may require protracted ventilation

Pelvis

- Pelvic ring disruption with shock, more than 5 units transfusion, evidence of continued hemorrhage, and compound (open) pelvic injury or pelvic visceral injury.

Multiple System Injury

- Severe face injury with head injury
- Chest injury with head injury
- Abdominal or pelvic injury with head injury
- Burns with head injury

Secondary Deterioration (late sequelae)

- Patient requiring mechanical ventilation
- Sepsis
- Single or multiple organ system failure (deterioration in CNS, cardiac, pulmonary, hepatic, renal or coagulation systems)
- Osteomyelitis

APPENDIX F

minutes away. The EMS system should be structured to provide the patient reasonable timely access to the appropriate level of care indicated by the extent and nature of injuries received.

Continuing education and evaluation. Because of partial lack of scientific basis for field triage and the importance of this process in the delivery of trauma patient care, it is essential that surgeons be involved in the continuing education of prehospital-care personnel, as well as in feedback to prehospital personnel on the accuracy of their patient triage decisions. Undoubtedly, as decision rules are reviewed and the results reported back to the prehospital-care personnel, the process of triage will improve.

Overtriage and undertriage. A system has yet to be developed that reliably and correctly selects the patients for appropriate levels of care that might be available in a given region. As a result, there will always be a certain number of patients incorrectly identified as needing trauma-center care who could be adequately handled at a community hospital (90

duced by prompt access to the needed level of definitive care. At the same time, overtriage of patients produces costly overuse of trauma centers and funnels a number of patients away from community hospitals.

Not all patients with minor injuries can be clearly grouped as not needing trauma-center evaluation. For example, a patient suffering from high decel-

“Studies have shown that it may take up to 50 percent of overtriage to maintain a minimum level of undertriage in a community.”

“Not all patients with minor injuries can be clearly grouped as not needing trauma-center evaluation.”

to 95% of all injured patients do not need trauma-center care). Patients incorrectly sent to trauma centers are referred to as “overtriages.” Conversely, patients who are in need of trauma-center care, but who fail to gain timely access, are referred to as “undertriages.” Together, overtriage and undertriage combine to form a misclassification rate for any triage decision scheme or rule.

Overtriage and undertriage are interdependent. Efforts have been made to minimize the number of patients who are undertriaged in a trauma system. It is these patients who are at risk of dying and whose lives may be saved or the cost of care re-

duction injuries is found to have a wide mediastinum by x-ray in a rural emergency department. Because of the risk of a ruptured aorta, the standard of care would dictate that such a patient be promptly evaluated in a trauma center where an arteriogram and necessary surgical care were immediately available. Approximately 60 percent of patients x-rayed for a wide supramediastinum following trauma will not have a ruptured aorta. These patients might eventually turn out to have minimal injuries. They could appear as an overtriage on trauma-system statistics, yet no one would argue the medical prudence of transferring such a patient group for trauma-center evaluation.

Studies have shown that it may take up to 50 percent of overtriage to maintain a minimum level of undertriage in a community. It has also been estimated that because of the small number of patients who really need to be in trauma centers, the impact on an individual institution in terms of patient flow is less than 30 patients per year. Clearly, the surgical community needs to be more concerned about undertriage and the medical consequences that result from inadequate use of a trauma system.

6.3 DADE COUNTY TRAUMA TRIAGE CRITERIA

IV. SURGICAL / TRAUMA

Patients meeting any of the following Trauma Triage Criteria must be transported to a Trauma Center.

TRAUMA TRIAGE CRITERIA

1. Systolic BP < 90
2. Glasgow coma Score < 12
3. Paralysis
4. Major Burns (> 20% 2 nd and/or 3 rd degree)
5. Penetrating injury to the head, neck, torso
or groin.
6. High index of suspicion for significant injury based on mechanism of injury and/or paramedic judgement.

Appendix

Appendix A

California

Medical Insurance Exchange of California	-	rate increases
\$500,000/\$1.5 million claims made		expected this
Class 3 (Gyn Surgery only)	\$12,292	summer, percentages
Class 4A & 4B		unknown at this
(family practice including OB		time
and OB/Gyn surgery)	\$21,987	
 \$1 million/\$3 million		
Class 3	\$15,868	
Class 4A & 4B	\$27,487	
 \$5 million/\$5 million		
Class 3	\$19,708	
Class 4A & 4B	\$40,344	

Southern California Physicians Exchange - claims made mature rates

	9/84	1/85	
\$500,000/\$1.5 million			
Class 7 (Gyn surgery only)	\$19,224	\$22,368	+15.9%
Class 8A (Ob & Ob/Gyn Surgery)	\$24,656	\$30,024	+21.8%
 \$1 million/\$3 million			
Class 7	\$22,764	\$26,616	+16.9%
Class 8A	\$29,184	\$35,720	+22.4%
 \$5 million/\$5 million			
Class 7	\$36,296	\$42,808	+17.9%
Class 8A	\$46,536	\$57,460	+23.5%

Florida

Florida Physician's Insurance Reciprocal - claims made mature rates

	9/84	1/85	
\$500,000/\$1.5 million (lower rated portions of state)			
Class 4 (Gyn surgery only)	\$ 9,455	\$14,023	+48.3%
Class 7 (Ob/Gyn Sur)	\$23,364	\$31,841	+36.4%
Dade and Broward counties			
Class 4	\$13,707	\$21,035	+53.5%
Class 7	\$33,879	\$47,807	+41.1%
 \$1 million/\$3 million			
Class 4	\$11,819	\$18,580	+57.2%
Class 7	\$29,205	\$42,230	+44.6%

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Dade and Broward counties			
Class 4	\$17,134	\$27,871	+62.7%
Class 7	\$42,349	\$63,344	+49.6%
\$1.5 million/\$4.5 million			
Class 4	\$13,237	\$22,086	+66.9%
Class 7	\$32,709	\$50,197	+53.5%
Dade and Broward counties			
Class 4	\$19,190	\$33,130	+72.6%
Class 7	\$47,431	\$75,296	+58.7%
Rehabilitation Fee on a One Time Basis:			
Class 4	\$ 5,000		
Class 7	\$ 8,000		

Illinois

Illinois State Medical Inter-Insurance Exchange - mature rates
for occurrence coverage

\$100,000/\$300,000 for highest of three territories	
Class 6 Ob/Gyn surgery	\$13,856
\$1 million/\$3 million	
Class 6	\$32,128
\$5 million/\$5 million	
Class 6	\$43,144
Premiums will increase 7/85	

New York

Medical Liability Mutual Insurance Company - 4 territories -
mature rates - Occurrence

\$100,000/\$300,000	7/84	4/85 retroactive to 7/84
Territory 03		
Class 3 (Ob/Gyn sur & Gyn only)	\$35,415	\$54,893
Territory 02	\$30,958	\$47,985
Territory 01	\$27,405	\$42,478
Territory 00	\$16,021	\$24,833
\$500,000/\$1 million		
Territory 03	\$47,811	\$74,107
Territory 02	\$41,794	\$64,781
Territory 01	\$36,996	\$57,344
Territory 00	\$21,629	\$33,525
\$1 million/\$3 million		
Territory 03	\$51,704	\$80,141
Territory 02	\$45,196	\$70,054
Territory 01	\$40,007	\$62,011
Territory 00	\$23,394	\$36,261

Territory 03 - Nassau and Suffolk counties
 Territory 02 - Bronx, Kings, Queens, Richmond, Rockland and Sullivan counties
 Territory 01 - New York, Orange, Ulster and Westchester counties
 Territory 00 - All other counties

A rate increase of 55%, retroactive to July 1984, has been approved and is shown above.

Texas

Texas Medical Liability Trust - occurrence coverage written for three territories plus a one-time surplus charge payable quarterly over either one year or four years.

\$2 million/\$3 million	10/84
Territory I (Brazoria, Galveston, Harris, Jefferson, and Montgomery counties)	
Class 6A (Gyn Sur only)	\$22,515
Class 6B (Ob/Gyn Sur)	\$26,681
Territory II (All other counties except Bexar and San Antonio)	
Class 6A	\$13,293
Class 6B	\$15,757
Territory III (Bexar county and San Antonio)	
Class 6A	\$16,009
Class 6B	\$18,282
Surplus Charge	
Territory I	
Class 6A & 6B	\$ 8,575
Territory II	
Class 6A & 6B	\$ 5,717
Territory III	
Class 6A & 6B	\$ 7,146

ACOG has also conducted informal surveys of physician-owned professional liability insurance companies since September 1984 to determine if there is a premium differential between coverage for the practice of OB/Gyn surgery and the practice of gynecology only. The following chart illustrates the differential in states charging an excess premium for obstetricians reflecting a typical \$1 million policy limit unless otherwise indicated:

State	Percentage Differential
Alabama	19.5%
Alaska	73.6%
Arizona (\$100,000/\$300,000)	49.1%
California	73.2%

6.4 MEDICAL PREMIUM COMPARISON

Specialty	Class	Specialty	Class	Specialty	Class
Administrative Medicine	1	Family Practice (General Anesthesia)	7	Oncology	2
Aerospace Medicine	1	Forensic Pathology	1	Ophthalmology	3
Allergy	1	Gastroenterology	2	Orthopedic Surgery	7
Anesthesiology	4	General Medicine	3	Otolaryngology	4
Cardiac Surgery	7A	General Practice (Minor Surgery) ¹	3	Otolaryngology (Including Plastic Surgery)	6
Cardiology	2	General Practice (Including Obstetrics) ²	5	Pathology	1
Cardiology (Including Coronary		General Practice (Major Surgery)	6	Pediatric Allergy	1
Arteriography or Cardiac Catheterization)	4	General Practice (General Anesthesia)	7	Pediatric Cardiology	2
Child Psychiatry	1	General Preventive Medicine	2	Pediatric Cardiology (Including Coronary	
Colon & Rectal Surgery	6	General Surgery	6	Arteriography)	4
Dermatology	2	Gynecology Only	6	Pediatrics	2
Dermatology (Including Cosmetic Surgery		Hematology	2	Physical Medicine and Rehabilitation	1
and/or Radiation)	3	Internal Medicine	2	Plastic Surgery	6
Diagnostic Radiology	2	Internal Medicine (Including Coronary		Psychiatry	1
Diagnostic Radiology (Including Coronary		Arteriography)	4	Public Health	1
Arteriography)	4	Neonatology	4	Pulmonary Disease	2
Emergency Room Medicine	5	Nephrology	2	Rheumatology	2
Endocrinology	2	Neurology	2	Surgical Assisting	3
Family Practice (Minor Surgery) ¹	3	Neurosurgery	8	Therapeutic Radiology	5
Family Practice (Including Obstetrics) ²	5	Nuclear Medicine	2	Thoracic Surgery	6
Family Practice (Major Surgery)	6	Obstetrics and Gynecology	7A	Urology	4

Minor Surgery includes: cystoscopies, tonsilectomies, adenoidectomies, laceration and suture (except for abortion), claspies, circumcisions, hemorrhoidectomies, myringotomies, and minor orthopedic procedures, and assisting in surgery.

Class 7A includes all procedures classified as Minor Surgery plus obstetrics (with spinal, caudal and epidural anesthesia, but excluding Caesarean sections) and abortion.

Quarterly Rates

For Coverage Effective January 1, 1986

(Northern California and Imperial, Kern, San Diego, San Luis Obispo, Santa Barbara and Ventura Counties)

To determine your quarterly rate, identify the class for your Medical Specialty, then locate the Retroactive Date of your policy in the table below. If your Retroactive Date falls between those listed, your premium will vary accordingly. If you are now insured under another claims-made policy and want an estimate of your premium to include prior acts ("nose") coverage, refer to the date closest to the effective date of your present policy. A Loss Prevention Discount may be available to you for your completion of our Loss Prevention Program. Contact your NORCAL marketing representative for details.

Limits (\$ Millions)	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 7A	Class 8
Retroactive Date — 1/01/81 or earlier									
\$.5M/\$1.5M	\$ 804	\$1,106	\$1,617	\$3,080	\$3,961	\$4,832	\$ 7,280	\$ 8,047	\$ 8,811
\$1M/\$3M	908	1,253	1,835	3,516	4,523	5,524	8,337	9,218	10,097
\$2M/\$4M	1,083	1,496	2,202	4,245	5,471	6,688	10,117	11,186	12,257
Retroactive Date — 1/01/82									
\$.5M/\$1.5M	\$ 744	\$1,023	\$1,492	\$2,830	\$3,637	\$4,435	\$6,673	\$ 7,374	\$ 8,073
\$1M/\$3M	839	1,157	1,691	3,228	4,150	5,067	7,638	8,443	9,247
\$2M/\$4M	999	1,379	2,026	3,894	5,016	6,129	9,263	10,240	11,219
Retroactive Date — 1/01/83									
\$.5M/\$1.5M	\$ 677	\$ 929	\$1,351	\$2,549	\$3,273	\$3,988	\$ 5,990	\$ 6,617	\$ 7,243
\$1M/\$3M	762	1,049	1,529	2,904	3,731	4,553	6,851	7,572	8,291
\$2M/\$4M	905	1,247	1,828	3,499	4,504	5,501	8,302	9,176	10,052
Retroactive Date — 1/01/84									
\$.5M/\$1.5M	\$ 602	\$ 824	\$1,193	\$2,234	\$2,864	\$3,487	\$ 5,224	\$ 5,768	\$ 6,312
\$1M/\$3M	675	928	1,347	2,541	3,261	3,976	5,969	6,595	7,219
\$2M/\$4M	799	1,099	1,606	3,056	3,930	4,796	7,224	7,983	8,743
Retroactive Date — 1/01/85									
\$.5M/\$1.5M	\$ 505	\$ 688	\$ 989	\$1,827	\$2,336	\$2,840	\$ 4,234	\$ 4,672	\$ 5,109
\$1M/\$3M	563	771	1,112	2,072	2,653	3,231	4,830	5,333	5,834
\$2M/\$4M	662	908	1,319	2,484	3,188	3,886	5,833	6,442	7,052
New Enrollees Effective 1/01/86									
\$.5M/\$1.5M	\$ 328	\$ 440	\$ 617	\$1,085	\$1,374	\$1,661	\$ 2,430	\$ 2,674	\$ 2,917
\$1M/\$3M	359	485	684	1,218	1,546	1,873	2,753	3,032	3,310
\$2M/\$4M	413	559	796	1,441	1,836	2,228	3,297	3,633	3,970

FOR ASSISTANCE, CALL YOUR MARKETING REPRESENTATIVE — (800) 652-1051.

6.5 MEDICAL MALPRACTICE LAWS COMPARISON

MEDICAL MALPRACTICE LEGISLATION
COMPARISON BETWEEN CALIFORNIA AND FLORIDA

**CALIFORNIA MICRA:
ACCORDING TO GAO REPORT**

FLORIDA

**I
ATTORNEYS' FEES**

Established a sliding scale contingent fee schedule for Plaintiff(s)' attorney(s).

- 40 % for first \$50,000.00 recovered
- 33 1/3 % for the next \$50,000.00
- 25 % for the next \$100,000.00
- 10 % for any amount over \$200,000.00

Amended in 1986 to:

- 40 % for first \$50,000.00 recovered
- 33 1/3 % for the next \$50,000.00
- 25 % for the next \$500,000.00
- 15 % for any amount over \$600,000.00

a) 1980 F.S. 768.56 provided that Court should award reasonable attorneys' fees to the prevailing party in a medical malpractice action for the Plaintiff's attorneys to inform client(s) in writing of the provisions of this Statute. Statute was replaced in 1985.

b) 1985 F.S. 768.595 established a sliding scale contingent fee for Plaintiff(s)' attorneys between 15% and 45% dependant upon the stage in which the litigation was concluded. Established a reduced fee for recoveries in excess of \$2,000,000.00 superceded by (c) below.

c) 1986 The Florida Supreme Court adopted a sliding scale contingent fee schedule for all Personal Injury actions.

33 1/3% if case settled before suit filed and recovery is less than or equal to \$1,000,000.00

40% if case is settled after defendant files an answer and recovery is less than or equal to \$1,000,000.00

30 % if recovery is between \$1,000,000.00 and \$2,000,000.00.

20% if recovery is greater than \$2,000,000.00

Percentages are reduced if Defendant admits liability in its Answer.

An additional 5% is charged for appeals.

494 So.2d 960 (Fla. 1986)

II
CAP ON DAMAGES

Established a \$250,000.00 limit on the amount recoverable for non-economic losses; pain, suffering, inconvenience, physical impairment, disfigurement and other non-pecuniary damage.

1986 F.S. 768.80 imposed a \$450,000.00 limit on damages for non-economic losses in all personal injury cases. Declared unconstitutional Smith v. Department of Insurance, 507 So.2d 1080 (Fla. 1987) as a violation of the State Constitution.

III
COLLATERAL SOURCES

Defendant permitted to introduce evidence that Plaintiff is entitled to benefits from other insurance. Plaintiff may then introduce evidence of premiums paid for insurance coverage.

1976 F.S. 768.50 The Plaintiff(s)' award is reduced by the amount he has received from collateral sources unless the collateral source has a subrogation right. Repealed in 1986 and replaced by F.S. 768.76 which applied the same collateral source rule to all personal injury actions.

IV
PAYMENT OF LARGE DAMAGE AWARDS

Allows periodic payment of future damages if the future damages exceed \$50,000.00

1975 F.S. 768.51 Allowed for periodic payment of future losses if such losses exceeded \$200,000.00. The limit was eventually extended to future losses of \$500,000.00 when the Statute was repealed in 1986 and replaced by 1986 F.S. 768.78 which allowed for periodic payment of future economic losses in excess of \$250,000.00 in all personal injury cases

V
STATUTE OF LIMITATIONS

One year after the Plaintiff discovered or should have discovered the injury or three years after the date of the injury

F.S. 95.11(4)
a) 1973 Within two years of the discovery of the injury.

b) 1974 Within two years of the discovery of the cause of action.

c) 1975 Within two years of the discovery of the cause of action, not more than four years from the date of the injury.

VI
REPORTING REQUIREMENTS

Insurers must report to the licensing agency malpractice settlements or arbitration awards over \$3,000.00. In 1979 the amount was increased to \$30,000.00 for physicians and surgeons. Also required reports on judgments against physicians.

F.S. 458.331 Insurance companies are required to report doctors who have had three or more claims in excess of \$10,000.00 within a five year period.

VII
QUALITY ASSURANCE

Established a medical quality assurance board

F.S. 768.41(1975) Established a medical quality assurance board.

F.S. 395.0165(1985) Established that one who fraudulently alters or falsifies medical records is guilty of a second degree misdemeanor and such action is grounds for a penalty against his license or privilege.

F.S. 395.0115(1985) Provided that a hospital must take disciplinary action against a physician who: (a) was found guilty by a Court of medical negligence or malpractice involving negligence, or (b) had one or more settlements of \$10,000.00 or more for medical negligence or malpractice involving negligence.

VIII
PRE-SUIT NOTICE REQUIREMENT

Established a 90 day notice to health care providers of the Plaintiff(s)' intent to sue for malpractice. F.S. 768.57(1985) Also established 90 day notice of intent to sue for malpractice.

IX
ARBITRATION PROVISION

Provided that any contract for medical services that contains a provision for arbitration of any dispute regarding malpractice also contain a specified disclosure statement as the first article of the contract.

F.S. 768.575 (1985) Allowed for court ordered arbitration.
F.S. 768.58 (1985) Provides for a mandatory settlement conference.

Florida previously had Florida Statute 768.44 (1975) providing for mandatory mediation of medical malpractice disputes. Declared unconstitutional in 1980 in the case of Aldana v. Holub, 381 So. 2d 231 (Fla. 1980).

X
JOINT AND SEVERAL LIABILITY

1986 Modified the joint and several liability doctrine for non-economic damages. Defendant(s)' payment for non-economic damages is limited to his degree of fault of causing the damages.

a) 1985 F.S. 768.59 Provided that each defendant in a medical malpractice action was responsible for the proportionate share of damages for any defendant from whom the judgement could not be collected. Repealed in 1986 and replaced by F.S. 768.81(1986) The doctrine in joint and several liability was modified to eliminate it in non-economic damages for negligence cases in which the total amount of damages exceeds \$25,000.00.

XI
MALPRACTICE EXPERTS

Limit the use of expert witnesses against doctors providing emergency medical care to those doctors who have practiced emergency medical care within the last five years in the same or similiar locality. C.S. § 1799.110

1975 F.S. § 768.45 Limited expert witnesses in medical "similar health care providers" or those who can convince the Court that they possess sufficient training experience and knowledge so as to be able to expertly testify as to the prevailing standard of care in the field. This Statute was amended in 1985 so that such training experience or knowledge was the result of after practice or teaching of medicine within five years before the alleged malpractice occurred.

XII
ADDITIONAL FLORIDA REFORMS

A. 1986 F.S. §627.9126 Required liability insurers to maintain information and the Department of Insurance to obtain this information on claims and the insurance companies' responses to claims so that the Department could analyze and evaluate the nature of causes, location cost and damages involved in liability cases.

B. Punitive Damages 1986 F.S. 768.73 Provided that:

(1) The Plaintiff must prove willful wanton or gross misconduct.

(2) The amount of punitive damages is limited to three times the compensatory damages.

(3) The total amount of punitive damages is divided as 40% to the Plaintiff, 60% to the Public Medical Assistance Fund in a personal injury or a wrongful death case, otherwise 60% to general revenue.

(4) The Plaintiff's attorney may only collect a fee on that portion which the Plaintiff collects.

(5) The participants can not inform the jury of the contents of the Statute.

C. Insurance Reforms

(1) 1986 F.S. 627.062 Was amended to provide for the review of insurance rates by the Department of Insurance and granted the Department the power to disapprove of the rates if they were excessive, inadequate or unfairly discriminatory.

(2) 1986 F.S. 627.356 Set guidelines for group professional liability self-insurance.

(3) 1986 F.S. 627.357 Was amended to expand the types of health care providers eligible to establish a medical malpractice risk management trust fund; it also provided for joint and several liability of members of the fund and rate approval by the Department of Insurance.

(4) 1986 Created F.S. §624.460 - 624.488 the Commercial Self Insurance Fund Act.

(5) 1986 F.S. 627.9126 Instructed liability insurers to maintain information on the results of claims. The Department of Insurance will sample information on the results of claims, insurance defense practices and what safety precautions have been taken to protect a future occurrence.

(6) 1986 F.S. 627.351 Was amended to allow the Medical Joint Underwriting Association to refuse to insure doctors who failed to comply with its risk management safety program.

(7) 1986 §66(1) of the Florida Tort Reform Act rolled back rates by creating a special credit to insureds of commercial liability carriers for savings resulting from the Tort Reform Act between October 1986 and January 1987. This section was declared unconstitutional in Smith v. Department of Insurance, 507 So. 2d 1080 (Fla. 1987).

6.6 MEDICAL MALPRACTICE LEGISLATION

MEDICAL MALPRACTICE LEGISLATION
ENACTED IN THE UNITED STATES 1971 - 1985
STATES SURVEY UPDATE 1985

Deborah R. Siegel, Director
Long-Range Planning
Medical Society of the State
of New York

MEDICAL MALPRACTICE LEGISLATION
ENACTED IN THE UNITED STATES 1971 - 1985

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>ALABAMA</u>	Claims Made & Occurrence policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments

<u>ALASKA</u>	Claims Made & Occurrence policies Collateral Sources Periodic Payments *	Caps on Awards Caps on Physicians' Personal Assets Contingency Fees
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* Jury cannot be advised of periodic payments use.

Highest premium \$5 mil/\$5 mil is \$40,246 annually.

<u>ARIZONA</u>	Claims Made & Occurrence policies Collateral Sources	Caps on Awards Caps on Physicians' Personal Assets Contingency Fees Periodic Payments
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Highest premium (\$3,000,000 coverage) is \$30,000 annually. \$5 mil/\$5 mil coverage available.

<u>ARKANSAS</u>	Claims Made & Occurrence policies Collateral Sources Periodic Payments	Caps on Awards Caps on Physicians' Personal Assets Contingency Fees
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Average premiums range between \$900 and \$7,000. \$7,000 highest in the state.

<u>CALIFORNIA</u>	Claims Made & Occurrence policies Caps on Awards Collateral Sources Contingency Fees Periodic Payments	Caps on Physicians' Personal Assets
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The highest premium (\$1 mil/\$3 mil coverage) is \$51,920 for Neurosurgeons. \$10 mil/\$10 mil is available. \$2 mil/\$4 mil is the most common, but there are a large number of \$5 mil/\$5 mil policies.

Have had a cap on pain and suffering (non-economic damages) since 1975 (\$250,000). It was upheld by the Supreme Court this year. They feel, as far as it's effect on premium costs, that it will be felt more now and in the next few years than it had been previously. While it is believed to be of value, no empirical data will be available before November or December, 1985. There are already signs that the trial lawyers will go for higher economic damages and will try to undo what's been done-there have been proposals to this effect and also to raise the level of the cap.

<u>COLORADO</u>	Occurrence policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments
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Average premiums range from \$1,600 - \$26,000. \$26,000 highest.

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>CONNECTICUT</u>	Claims Made Policies Collateral Sources	Caps on Awards Caps on Physicians' Personal Assets

Contingency Fees (not mandated but are used).

Periodic Payments (not mandated but are used in large settlements).

Highest premium (for Neurosurgeons, Cardiologists, Orthopedics) is \$27,000, but will rise to \$31,800 after an 18% increase. The highest coverage is \$1 mil.

<u>DELAWARE</u>	Claims Made policies Collateral Sources Contingency Fees * Periodic Payments	Caps on Awards Caps on Physicians' Personal Assets
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* The contingency fee schedule is 35% on first \$100,000; 25% on next \$100,000; and 10% on the balance.

Average premiums range between \$5,000-\$10,000. The highest is \$21,000 for fourth year OB/GYN's.

<u>FLORIDA</u>	Claims Made & Occurrence policies Contingency Fees * Periodic Payments **	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources
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* Contingency fee scale (subject to Supreme Court changes). The sliding scale ranges from 15% - 45% depending upon the point at which the case is settled. 15% on awards in excess of \$2 mil.

** On awards over \$500,000.

Highest premium (OB Surgeons and Neurosurgeons) \$78,450 (\$100,000/\$300,000). Highest coverage: \$1 mil/\$3 mil.

<u>GEORGIA</u>	Claims Made policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments
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Highest premium is \$37,000. Highest coverage is \$10 mil/\$10 mil.

<u>HAWAII</u>	Claims Made policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees * Periodic Payments
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* Attorney fees must be approved by the court.

Highest premiums are \$33,000 annually. Total physician liability: \$5 mil/\$5 mil.

<u>IDAHO</u>	Claims Made & Occurrence policies	Caps on Awards * Caps on Physicians' Personal Assets Collateral Sources * Contingency Fees * Periodic Payments
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* Caps, collateral sources and contingency fees had statutes but were declared unconstitutional several years ago.

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>ILLINOIS</u>	Claims Made & Occurrence policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments

The highest premium is \$83,000 (Neurosurgeons) and total physician liability is \$5 mil/\$5 mil. Most physicians in state carry \$1 mil/\$3 mil.

<u>INDIANA</u>	Claims Made & Occurrence policies *	Collateral Sources
	Caps on Awards	
	Caps on Physicians' Personal Assets	
	Contingency Fees **	
	Periodic Payments	

* Four companies writing occurrence policies and one writing claims made (with a long tail)

** Via a statute created patients compensation fund.

Feel very strongly that their \$500,000 cap on awards has helped keep premiums down.

<u>IOWA</u>	Claims Made & Occurrence policies **	Caps on Awards
	Collateral Sources *	Caps on Physicians' Personal Assets
	Contingency Fees *	Periodic Payments

* Modified collateral sources provision and contingency fees are not statutorily mandated, but are used.

** Are moving towards claims made only.

The highest coverage is \$5 mil.

<u>KANSAS</u>	Claims Made & Occurrence policies	Caps on Awards
	Collateral Sources	Contingency Fees *
		Periodic Payments

Physicians' Personal Assets and Awards beyond coverage are covered via a "health care stability fund". This adds a 110% surcharge on premiums.

* Attorneys fees are not covered by statute, but are expected to be "reasonable" - the courts don't like to get involved - generally 25% - 50% of settlement.

Premiums for physicians who can't get coverage through two companies, possibly get it through JUA - if they pass personal interview which determines the physicians willingness to properly inform patients.

Have a cap on punitive damages.

Premiums are very variable.

<u>KENTUCKY</u>	Claims Made policies	Caps on Awards
		Caps on Physicians' Personal Assets
		Collateral Sources
		Contingency Fees
		Periodic Payments

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>LOUISIANA</u>	Claims Made & Occurrence policies Caps on Awards Periodic Payments *	Caps on Physicians' Personal Assets Collateral Sources Contingency Fees

* Periodic payments are used via authority of the Attorney Generals office.

Since 1975 have three caps of \$500,000 each:

Medical malpractice - private physicians; medical malpractice - employers of physicians in Louisiana; state liability for all other tort actions.

The highest premium is in the range of \$21,000.

<u>MAINE</u>	Claims Made Periodic Payments	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees
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Have instituted monthly meetings with trial lawyers in response to their liability crisis.

Highest premium \$40,000 (Neurosurgeons).

<u>MARYLAND</u>	Claims Made & Occurrence policies Contingency Fee * Periodic Payments **	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources
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* Contingency fee statute allows judge to review attorney's fees.

** Periodic payments optional, not mandated.

The highest premium (OBGYN) is \$35,000 for \$1 mil/\$3 mil. Highest coverage is \$1 mil/\$3 mil with a \$5 mil excess.

<u>MASSACHUSETTS</u>	Claims Made & Occurrence policies Collateral Sources	Caps on Awards Caps on Physicians' Personal Assets Contingency Fees * Periodic Payments
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* Though no statutory provision for contingency fees, they are used: 33 1/3% - 50%.

The highest premium is \$15,300 (Orthopedics, Plastic Surgeons, Neurosurgeons, OBGs).

<u>MICHIGAN</u>	Occurrence policies Contingency Fees *	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Periodic Payments
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* Court rule allows 33% contingency fees.

Highest premium \$55,000 (OBGs', Neurosurgeons). \$1 mil/\$1 mil highest coverage.

<u>MINNESOTA</u>	Claims Made policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments
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Highest policy is \$20,000. Total physicians liability \$4 mil/\$5 mil.

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>NEW JERSEY</u>	Claims Made & Occurrence policies Contingency Fees *	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Periodic Payments

* Sliding scale contingency fees.

Average premium is \$9,000; the highest is \$30,000 (Neurosurgeons) \$1 mil/\$1 mil coverage. The highest coverage is \$5 mil.

Currently before legislature is a four part bill which includes caps on awards, collateral sources, periodic payments, expert witness and certificate of meritorious claim.

<u>NEW MEXICO</u>	Claims Made policies Caps on Awards * Caps on Physicians' Personal Assets	Collateral Sources Contingency Fees Periodic Payments
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* Caps on awards excluding punitive damages.

Have since 1976 a \$500,000 cap (excluding punitive damages). Feel it has had somewhat of an effect on premium costs. The courts are very conservative - only two cases have been awarded the \$500,000. The conservative climate, the cap and the whole malpractice bill are what keeps the premiums low.

<u>NEW YORK</u>	Claims Made & Occurrence policies Collateral Sources Contingency Fees * Periodic Payments	Caps on Awards Caps on Physicians' Personal Assets
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* Contingency Fees: 33 1/3 - 30% of first \$250,000; 25% next \$250,000; 20% next \$500,000; 15% next \$250,000; and 10% of any further amount.

Highest premium is \$83,000, for Neurosurgeons - \$1 mil/\$3 mil.

New York physicians pay the highest premium rates overall in the country. Downstate especially so.

<u>NORTH CAROLINA</u>	Claims Made policies Collateral Sources	Caps on Awards Caps on Physicians' Personal Assets Contingency Fees * Periodic Payments
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* Contingency fees are not a statutory provision, though they are used - average is 20%

The highest premium is \$17,000 (Neurosurgeons). \$5 mil/\$5 mil coverage is available.

<u>NORTH DAKOTA</u>	Claims Made & Occurrence policies Collateral Sources	Caps on Awards Caps on Physicians' Personal Assets Contingency Fees *
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* Contingency fees are not a statutory provision, though they are used - generally 33

The average premium is very variable and the highest is \$45,000 (Neurosurgeon). Highest coverage is \$10 mil.

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>OHIO</u>	Claims Made & Occurrence policies Collateral Sources	Caps on Awards Caps on Physicians' Personal Assets Contingency Fees Periodic Payments

Current bills will attempt for a cap on punitive damage and certain economic damages, contingency fees and periodic payments. Feel the "situation is deteriorating rapidly." Major hospital carriers are requiring hospital medical staffs to change bylaws to include as criteria for membership that a physician carry \$1 mil coverage. Feel this will only encourage larger awards.

Highest premium is \$17,000 for Neurosurgeon -- \$1 mil/\$3 mil. The highest coverage is \$5 mil. There is a \$250,000 cap on pain and suffering and collateral sources provision.

Have had a \$250,000 cap since 1975 on non-economic damages - no cap on economic or punitive damages.

<u>OKLAHOMA</u>	Occurrence policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees * Periodic Payments *
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* Neither contingency fees or periodic payments are statutorily mandated but can be used (contingency fees are generally 40 - 50% of award).

Average premium is \$4,000. The highest premium is \$12,000 (OBGs, Neurosurgeons, Plastic-Surgeons) \$1 mil/\$3 mil.

<u>OREGON</u>	Claims Made & Occurrence policies Contingency Fees *	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Periodic Payments
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* Contingency fees: 35% on first \$100,000; 35% on next \$100,000 and 10% on balance.

Highest premium, \$5 mil coverage: \$40,000. Going to \$64,000 in 1986 (Neurosurgeon).

<u>PENNSYLVANIA</u>	Claims Made & Occurrence policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments
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No limit to amount of insurance physician can buy, a catastrophic loss fund covers \$1 mil. including personal assets.

<u>RHODE ISLAND</u>	Occurrence policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments *
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*Periodic payments not statutorily mandated, in actuality, they are used.

Highest premium is \$30,000 (\$1 mil/\$3 mil coverage).

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>SOUTH CAROLINA</u>	Periodic Payments Caps on Physicians Personal Assets *	Caps on Awards Collateral Sources Contingency Fees

* Physicians Personal Assets are covered through a patients compensation fund (no cap).

Highest premium (\$1 mil/\$3 mil) is \$5,600 for a Neurosurgeon.

<u>SOUTH DAKOTA</u>	Claims Made & Occurrence policies Caps on Awards Collateral Sources Contingency Fees	Caps on Physicians' Personal Assets Periodic Payments
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Have had a \$500,000 cap on general damages since 1974-75. Feel it hasn't made any difference on premium costs as premium rates continue to go up.

The highest premium is \$32,000 for Orthopedic Surgeons and Neurosurgeons. Can buy as high a policy as they wish.

<u>TENNESSEE</u>	Occurrence policies Collateral Sources Contingency Fees *	Caps on Awards Caps on Physicians' Personal Assets Periodic Payments **
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* Contingency fees maximum is 33%.

** No provision for periodic payments but judge can use.

Highest premium approximately \$30,000.

<u>TEXAS</u>	Claims Made & Occurrence policies** Caps on Awards *** Caps on Physicians' Personal Assets* Collateral Sources	Contingency Fees ** Periodic Payments **
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* Homestead rule covers physicians' personal assets.

** Contingency fees and periodic payments are not statutorily mandated, but are used.

*** A \$500,000 cap on awards since 1975. This cap is now being challenged. Feel the cap has had a positive effect on keeping premium costs down.

** Moving towards claims made policies.

\$1 mil/\$3 mil is the highest coverage.

<u>UTAH</u>	Occurrence policies * Collateral Sources Contingency Fees **	Caps on Awards Caps on Physicians' Personal Assets Periodic Payments
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* Moving towards claims made policies.

** Contingency fees - 33 1/3%.

Highest policy is \$18,600.

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>VERMONT</u>	Claims Made	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees * Periodic Payments

* Contingency fees not mandated but used.

Rural community and general conservative climate keep situation under control.

The highest premium for \$1 mil/\$3 mil coverage (Neurosurgeons) is \$10,889 or \$24,622 depending on company (mature rates). Highest coverage is \$1 mil/\$3 mil with a \$9 mil excess.

<u>VIRGINIA</u>	Claims Made & Occurrence policies Caps on Awards * Contingency Fees	Caps on Physicians' Personal Assets Collateral Sources Periodic Payments
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* Caps on awards \$1 mil.

Highest premium is \$42,000 (Neurosurgeon). Highest coverage is \$5 mil.

<u>WASHINGTON</u>	Claims Made policies *	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments
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* Claims made policies only starting in 1986.

Average premium \$8,500. Highest premium \$25,690 (\$1 mil - Neurosurgeon). Highest coverage available \$5 mil/\$7 mil.

<u>WEST VIRGINIA</u>	Claims Made & Occurrence policies	Caps on Awards Caps on Physicians' Personal Assets Collateral Sources Contingency Fees Periodic Payments
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The average premium is \$11,700. The highest is \$48,000 (Neurosurgeon). \$10 mil coverage available.

<u>WISCONSIN</u>	Claims Made & Occurrence policies ** Caps on Physicians' Personal Assets* Periodic Payments **	Caps on Awards Collateral Sources Contingency Fees ***
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* A physician is required to purchase \$200,000 coverage which makes him eligible for a patients compensation fund. Awards beyond his coverage and personal assets are handled via this fund.

** 85-90% are occurrence policies.

*** Contingency fees are not statutorily mandated, but are used.

*** A modified periodic payment rule is used for awards of future damages of \$1 mil.

The highest premium is \$44,600 (Neurosurgeon).

STATE	HAVE PROVISIONS FOR:	DO NOT HAVE PROVISIONS FOR:
<u>WYOMING</u>	Claims Made & Occurrence policies Collateral Sources Structured Awards *	Caps on Awards Caps on Physicians' Personal Assets Contingency Fees

* Structured awards are not consistently recognized by the courts.

Highest premium (\$1 mil coverage) under \$20,000.

- K E Y -

- X -- Legislation enacted
 - XR-- Repealed and or declared unconstitutional by State Supreme Court
 - * -- Challenged, declared constitutional
 - S -- Sunset provision allows expiration
 - 1 -- Applicable only to claims brought before pre-trial panel
 - 2 -- Admissable only if panel decision is unanimous
 - 3.-- Only formal panel decisions are admissable
 - 4 -- Provision enacted by fund never established
 - 5 -- Via a fund or rule but not by statute
 - 6 -- Caps on pain and suffering - non-economic damages
 - 7 -- Caps on punitive damages only
 - 8 -- Caps on awards covered by participating voluntary fund
 - 9 -- Excluding punitive damages
 - 10 -- Structured awards are not consistently recognized by the courts
- TOTAL-Number of states currently having that particular legislation

MEDICAL MAL-
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THE UNITED
STATES 1971 -
1985

STATES	AT TRIAL	ADVANCE PAYMENTS.....T	ARBITRATION.....T	ATTORNEY FEE REGULATION: PERCENTAGE.....T	ATTORNEY FEE REGULATION: CONTINGENCY FEE & SLIDING SCALE.....T	ATTORNEY FEE REGULATION: REASONABLE FEE.....T	AWARDING COSTS, EXPENSES AND FEES.....T	BURDEN OF PROOF.....T	CAPS ON PHYSICIANS' PERSONAL ASSETS.....T	CERTIFICATE OF MERITOR- IOUS CLAIM.....T	COLLATERAL SOURCES: DISCRETIONARY.....T	COLLATERAL SOURCES: MANDATORY OFFSET.....T	COUNTERSUITS.....T	INFORMED CONSENT.....T	ITEMIZED VERDICTS.....T	LIMITATIONS ON RECOVERY, CAPS ON AWARDS.....T	LOCALITY RULES: EXPERT WITNESS.....T	LOCALITY RULES: STANDARD OF CARE.....T	NOTICE OF INTENT TO SUE...T	PERIODIC PAYMENTS.....T	PRE-TRIAL SCREENING: ADMISSABLE.....T
ALABAMA	XR	X	X															X*	X		
ALASKA	X	X	X					X				X		X				X	X	X	X
ARIZONA	X					XR		X			X*							X			X*
ARKANSAS	XR						X	X						X				X	X	X	
CALIFORNIA	X		X		X*					X	X*					X6*				X	X*
COLORADO	X					X	X							XR							
CONNECTICUT	X	X																			X2
DELAWARE		X			X			X			X			X			X	X	X	X	X
FLORIDA	X				X		X							X			X	X	X	X	XR
GEORGIA	XR		X																		
HAWAII	X	X				XR								X							
IDAHO				X		XS		X				XR		X		XS		X*	X*		
ILLINOIS	X	X					X									XR					XR
INDIANA	X*	X		X*					X								X*	X		X	X*
IOWA	X				X	X						X*		X							
KANSAS	X						X		X5		X*					X7				X	

STATES	PRE-TRIAL SCREENING: NON-ADMISSABLE.....T	PUNITIVE DAMAGES.....T	REMITTANCE & ADDITUR PROVISION.....T	RES IPSA LOQUITUR.....T	STATUTE OF FRAUDS.....T	STATUTE OF LIMITATIONS: SPECIFIC MEDICAL MAL- PRACTICE.....T	STATUTE OF LIMITATIONS: DISCOVERY.....T	STATUTE OF LIMITATIONS: MAXIMUM PERIOD.....T	STATUTE OF LIMITATIONS: MINORS.....T	CHANNELING.....I	EXCESS RECOVERY FUNDS PATIENT COMPENSATION FUND.....I	HEALTH CARE MUTUAL INSURANCE COMPANIES.....I	HOSPITAL RISK MANAGEMENT COMMITTEE.....I	INCIDENT AND CLAIM REPORTING.....I	LIMITATION ON CANCELLATION OF POLICY.....I	MANDATORY INSURANCE COVERAGE.....I	PREMIUMS.....I	REINSURANCE EXCHANGE.....I	RESPONDENT IN DISCOVERY.....I	TYPE OF POLICY CLAIMS MADE.....I	TYPE OF POLICY: OCCURRENCE.....I
ALABAMA						X*	XR	X*	X*					X						X	X
ALASKA				X	X	X	X		X			X		X		X				X	X
ARIZONA					X	XR	X		XR			X		X						X	X
ARKANSAS	X					X	X	X	X					X	X			X		X	X
CALIFORNIA				X		X	X	X	X					X			X			X	X
COLORADO						X*	X*	X*	X		X4			X	X	X					X
CONNECTICUT						X*		X*							X					X	
DELAWARE		X		X	X	X	X		X					X						X	
FLORIDA			X	X		X		X			X	X	X							X	X
GEORGIA						X*	X	X	X											X	
HAWAII	X					X	X	X	X		XR	X		X		XR				X	
IDAHO	X	XR				X								X		XR				X	X
ILLINOIS	XR			X		X*	X	X*	X		X4			X					X	X	X
INDIANA					X	X*		X	X*		X			X		X				X	X
IOWA						X	X	X	X			X		X						X	X

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STATES	AT TRIAL.....T	ADVANCE PAYMENTS.....T	ARBITRATION.....T	ATTORNEY FEE REGULATION: PERCENTAGE.....T	ATTORNEY FEE REGULATION: CONTINGENCY FEE & SLIDING SCALE.....T	ATTORNEY FEE REGULATION: REASONABLE FEE.....T	AWARDING COSTS, EXPENSES AND FEES.....T	BURDEN OF PROOF.....T	CAPS ON PHYSICIANS' PERSONAL ASSETS.....T	CERTIFICATE OF MERITOR- IOUS CLAIM.....T	COLLATERAL SOURCES: DISCRETIONARY.....T	COLLATERAL SOURCES: MANDATORY OFFSET.....T	COUNTERSUITS.....T	INFORMED CONSENT.....T	ITEMIZED VERDICTS.....T	LIMITATIONS ON RECOVERY, CAPS ON AWARDS.....T	LOCALITY RULES: EXPERT WITNESS.....T	LOCALITY RULES: STANDARD OF CARE.....T	NOTICE OF INTENT TO SUE...T	PERIODIC PAYMENTS.....T	PRE-TRIAL SCREENING: ADMISSABLE.....T
LOUISIANA	X*		X					X						X		X					X*
MAINE	X		XR																		
MARYLAND	X	X	X		X														X		X
MASSACHUSETTS	X						X*														
MICHIGAN			X*	X																	
MINNESOTA																					
MISSISSIPPI	X																				
MISSOURI	X																				
MONTANA																					
NEBRASKA	X	X			X*		X				X*			X		X8*		X			X*
NEVADA		X						X						X				X			XR
NEW HAMPSHIRE	XR				XR		XR	XR			XR	XR		XR	XR	XR	XR	XR	XR	XR	
NEW JERSEY	X5				X5																
NEW MEXICO	X	X							X							X9			X		
NEW YORK	X			X	X		X				XR	X		X	X					X	X2
NORTH CAROLINA	X	X						X		X				XR				X			XR

MEDICAL MAL-
PRACTICE LEG-
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STATES 1971 -
1985

STATES	PRE-TRIAL SCREENING NON-ADMISSABLE.....T	PUNITIVE DAMAGES.....T	REMITTITUR & ADDITUR PROVISION.....T	RES IPSA LOQUITUR.....T	STATUTE OF FRAUDS.....T	STATUTE OF LIMITATIONS: SPECIFIC MEDICAL MAL- PRACTICE.....T	STATUTE OF LIMITATIONS: DISCOVERY.....T	STATUTE OF LIMITATIONS: MAXIMUM PERIOD.....T	STATUTE OF LIMITATIONS: MINORS.....T	CHANNELING.....I	EXCESS RECOVERY FUNDS PATIENT COMPENSATION FUND.I	HEALTH CARE MUTUAL INSURANCE COMPANIES.....I	HOSPITAL RISK MANAGEMENT COMMITTEE.....I	INCIDENT AND CLAIM REPORTING.....I	LIMITATION ON CANCELATION OF POLICY.....I	MANDATORY INSURANCE COVERAGE.....I	PREMIUMS.....I	REINSURANCE EXCHANGE.....I	RESPONDENT IN DISCOVERY....I	TYPE OF POLICY CLAIMS MADE.....I	TYPE OF POLICY: OCCURRENCE.....I
LOUISIANA						X	X	X	X		X			X	X					X	X
MAINE	X					X	X*	X	X			X	X		X					X	X
MARYLAND						X	X	X	X			X		X						X	X
MASSACHUSETTS	X						X	X	X					X						X	X
MICHIGAN						X	X		X			X		X							X
MINNESOTA						X			X					X						X	
MISSISSIPPI						X	X		X			X		X						X	
MISSOURI	XR					X	X	X	X			X		X						X	X
MONTANA	X*					X						X								X	
NEBRASKA					X	X			X		X									X	X
NEVADA				X		X	X	X	X		X			XR	X					X	X
NEW HAMPSHIRE	X			XR		X	X	X	XR					XR							X
NEW JERSEY						XR	X5		XR				X5							X	X
NEW MEXICO	X					X		X	X		X			X	X					X	X
NEW YORK						X	X	X	X			X		X						X	X
NORTH CAROLINA				X		X	X	X	X		X			X		X		XR		X	

1985

MEDICAL MAL- PRACTICE LEG- ISLATION IN THE UNITED STATES 1971 - 1985		STATES	
OHIO	X	AD DAMNUM.....	T
OKLAHOMA		ADVANCE PAYMENTS.....	T
OREGON		ARBITRATION.....	T
PENNSYLVANIA	X	ATTORNEY FEE REGULATION: PERCENTAGE.....	T
RHODE ISLAND	X	ATTORNEY FEE REGULATION: CONTINGENCY FEE & SLIDING SCALE.....	T
SOUTH CAROLINA		ATTORNEY FEE REGULATION: REASONABLE FEE.....	T
SOUTH DAKOTA		AWARDING COSTS, EXPENSES AND FEES.....	T
TENNESSEE	X	BURDEN OF PROOF.....	T
TEXAS	X	CAPS ON PHYSICIANS' PERSONAL ASSETS.....	T
UTAH	X	CERTIFICATE OF MERITOR- IOUS CLAIM.....	T
VERMONT		COLLATERAL SOURCES: DISCRETIONARY.....	T
VIRGINIA	X	COLLATERAL SOURCES: MANDATORY OFFSET.....	T
WASHINGTON	X	COUNTERSUITS.....	T
WEST VIRGINIA	X	INFORMED CONSENT.....	T
WISCONSIN	X	ITEMIZED VERDICTS.....	T
WYOMING	XR	LIMITATIONS ON RECOVERY, CAPS ON AWARDS.....	T
		LOCALITY RULES: EXPERT WITNESS.....	T
		LOCALITY RULES: STANDARD OF CARE.....	T
		NOTICE OF INTENT TO SUE...	T
		PERIODIC PAYMENTS.....	T
		PRE-TRIAL SCREENING: ADMISSABLE.....	T

MEDICAL MAL-
PRACTICE LEG-
ISLATION IN
THE UNITED
STATES 1971 -
1985

STATES	PRI-TRIAL SCREENING: NON-ADMISSABLE.....T	PUNITIVE DAMAGES.....T	REMITTITUR & ADDITUR PROVISION.....T	RES IPSA LOQUITUR.....T	STATUTE OF FRAUDS.....T	STATUTE OF LIMITATIONS: SPECIFIC MEDICAL MAL- PRACTICE.....T	STATUTE OF LIMITATIONS: DISCOVERY.....T	STATUTE OF LIMITATIONS: MAXIMUM PERIOD.....T	STATUTE OF LIMITATIONS: MINORS.....T	CHANNELING.....I	EXCESS RECOVERY FUNDS PATIENT COMPENSATION FUND..I	HEALTH CARE MUTUAL INSURANCE COMPANIES.....I	HOSPITAL RISK MANAGEMENT COMMITTEE.....I	INCIDENT AND CLAIM REPORTING.....I	LIMITATION ON CANCELATION OF POLICY.....I	MANDATORY INSURANCE COVERAGE.....I	PREMIUMS.....I	REINSURANCE EXCHANGE.....I	RESPONDENT IN DISCOVERY...I	TYPE OF POLICY CLAIMS MADE.....I	TYPE OF POLICY: OCCURRENCE.....I
OHIO				X	X	X	X	X	XR	X										X	X
OKLAHOMA				X		X								X							X
OREGON		X				X	X	X	X		X			X						X	X
PENNSYLVANIA		X			X		X	X			X				X	X				X	X
RHODE ISLAND				X		X	X	X	XR					X		X					X
SOUTH CAROLINA					X	X	X	X	X		X	X		X							
SOUTH DAKOTA						X	X	X	X			X		X						X	X
TENNESSEE				X		X	X	X				X		X							X
TEXAS				X	X	X	X	X	X			X			X					X	X
UTAH	X				X	X	X	X												X	X
VERMONT				X	X	X														X	
VIRGINIA					X	X		X	X											X	X
WASHINGTON			X			X	X	X				X								X	
WEST VIRGINIA																				X	
WISCONSIN				X	X	X	X	X	X	X	X			X	X					X	X
WYOMING				X	X	X		X		X	X									X	X

6.7 TRAUMA TASK FORCE QUESTIONS

1. TRAUMA SYSTEM ISSUES

System Management

1. What is the current management structure for the trauma system?
 - Is there a different structure for policy and implementation?
 - Who develops policy, who implements the system?
 - Are there advisory committees? If so, in what areas?
2. What regulatory authority exists for the current management structure at the State, Regional, or local level?
 - Who developed the legislation for this authority?
 - Who got it passed?
 - Get copies of legislation.
3. Is there a master trauma system plan? Who developed it? Is the master plan based on identified community needs?
4. Who has responsibility for the day-to-day management of the system?
5. Is there a medical director associated with the overall program? If so, who?
6. Has there been any changes/modifications to the overall management structure since initial implementation? What were the changes? What brought them about?
7. How is the system financed (financial base)? How much to prehospital, hospital, overall management?
8. How are interfacility transfers accomplished? Who's responsible?

Trauma Center Management

1. Does the trauma service have department status?
2. What is the hierarchy of the trauma service within the institution?
3. What is the relationship between administration and the trauma service?
4. Is there a Director of Trauma? Who? Are they paid/volunteer?
5. What is the authority of the Trauma Director?
6. Is there a trauma nurse coordinator?
 - What is her/his authority?
 - What is the reporting structure?
 - What are her/his responsibilities?

7. How has the trauma service affected the medical staff bylaws? If changed, how and why? What effect?
8. What is the relationship between the trauma physician and other physician specialists (ER, orthopaedic, neurosurgeon, anesthesiologists)?
9. What is the staffing of the trauma service (physician, nurse, assistant nurse, secretary)?

Trauma Center Designation

1. Who has the legal authority to designate trauma centers? What is the nature of that authority (designate, verify, categorize)?
2. What was the method for initial designation?
3. What are the criteria used for the designation of different levels of trauma centers?
4. Is there redesignation? If so, how? How frequently?
5. Was there a state/regional/local assessment conducted? If so, what were the trauma care problems? Were hospitals designated with respect to expected volume, geographics, or other criteria?
6. What impact did the designation have on trauma center patient volume and on the surrounding hospitals patient volume?
7. How do trauma centers interact with other hospitals in the immediate, as well as outside the immediate area?
 - Does the trauma center serve as an information and education resource center?
 - Does the trauma center provide training for physicians, nurses, and other trauma care staff on ATLS, triage, etc?
 - Is the training provided to staff at the trauma center and at other surrounding hospitals?
8. How many centers are there? What levels? Has there been a change in the number and why?
9. What has been the patient volume of serious trauma in the centers? What do you consider serious trauma?
10. What is the distribution for type of transport to the trauma center?

2. PREHOSPITAL CARE/AIR AMBULANCE SYSTEMS ISSUES

Training

1. Who provides the prehospital training?
2. What level of training is provided? BLS? ALS? ATLS? BTLS?
3. What training criteria and recertification criteria are there?
4. Who certifies the training?
5. Who pays for the training?

Communication

1. What type of communication system is there?
2. Who funds it?
3. Do they have central dispatch? Is there single access?
4. Is there a statewide or area-wide communication plan?
5. Who dispatches? What type of training do dispatchers have?
6. Are there problems with the current system? Describe.
7. Who manages the communication system?
8. Have evaluations of the communication system been conducted? What were the results?

Management

1. What is the authority for the prehospital system? Who manages the prehospital phase?
2. What has changed since the prehospital providers have become part of the trauma system, with designated trauma centers?
3. How is the prehospital integrated into the system?
4. Are there medical standards for: triage, treatment, transportation?
5. Is the prehospital system involved in any decisionmaking/systems planning, implementation for the trauma system?

Transportation

1. Who provides prehospital transport? How are transport services regulated?
2. Did they conduct an assessment for equipment needs?
3. Do they have air ambulance services? Who provides?
4. What licensing standards exist for ground/air?
5. Do responding units differ from transporting units? If different, what has been the experience?
6. What's the response time? Average? 95%? What's the time to definitive care? Is there a maximum transport time?
7. How many attendants on board, both ground and air? What is the level of training of the attendants?
8. How do ground units integrate with air units in responding to serious trauma?
9. Who has authority to request an air ambulance?
10. Who pays for ground and air transports? Charges? Payer-mix?
11. Average operating cost per run, ground and air?
12. Average charge per run, ground and air?
13. Were there any major changes in the transportation system over the life of the trauma system? If so, what were they?

Reporting

1. Do they have uniform reporting?
2. Who collects and evaluates the ambulance run forms?
3. What types of reports are generated?
4. Is there quality assurance feedback to the services? Who does it?

Triage Criteria

1. What are the triage criteria and protocols?
2. Who established the criteria? Who evaluates the criteria?
3. Have the triage criteria changed during the life of the system? If so, how?

4. Do they score severity? If so, what method?

Glasgow Coma Scale?

Trauma Score?

CRAMS Scale?

Mechanism of Injury?

5. Do they have medical direction? Who gives medical direction?

6. Is there legislation and/or policies that allow patients to bypass local hospitals to go to trauma centers? If they have authority to bypass local hospitals and don't, what are the legal ramifications? Have there been any cases? If so; describe.

7. Has there been an undertriage to surrounding hospitals? Overtriage to trauma centers? How has this been corrected? What was the impact, and how was it measured?

3. SYSTEM EVALUATION AND QUALITY ASSURANCE ISSUES

1. How is the system evaluated and quality assurance conducted?
2. Who's responsible for system evaluation and quality assurance(QA)?
3. What are the criteria for evaluating the system?
4. What are the components of the QA program? Is there a feedback loop for demonstrated problems?
5. Who performs the system evaluation and QA?
6. Do they have a trauma registry?
7. What's the scope of the registry?
8. Define the data elements. What are the audit screens?
9. What are the costs? Who funds the registry?
10. What types of reports are generated? Who gets the reports?
11. How do they get records from participating and non-participating hospitals?
12. How do they promote the trauma registry?
13. Do they get medical examiners records?
14. Do they evaluate the systems effect on outcome? How?
15. Do they document compliance with system criteria? How?
16. How are interfacility transfers accomplished? Who's responsible?

16. What is the average paid claim against hospitals in your area (or State)? Has this average paid claim changed over the past 3-5 years? Describe.
17. What is the average insurer's cost to investigate and defend physician malpractice claims in your area (or State)? Has this cost changed over the past 3-5 years? Describe.
18. For the following tort reforms, indicate whether it exists or not in your State, the legislative or regulatory authority for the reform, whether or not the reform has been challenged in State or Federal court, the impact of the reform on containing liability costs, and the impact of the reform on containing malpractice insurance costs:
 - Ad damnum clause
 - Binding arbitration
 - Limits on attorney's fees
 - Awarding defendant's costs
 - Collateral source-malpractice awards reduced by compensation received from other sources
 - Credentials of expert witness
 - Limits or caps on liability
 - Patient compensation fund
 - Periodic payment vs. lump sum
 - Pretrial screening panel
 - Res ipsa loquitur-limits on types of cases in this category
 - Statute of Limitations
 - Statute of Limitations for Minors
 - Standards of Care-Plaintiff must prove that medical standards of community not met by provider.
19. Do you believe that the quality assurance program implemented in your trauma system has had any impact on liability claims or malpractice insurance? Explain.
20. Are there other things the medical/legal/insurance system in your State should consider in reducing the cost of malpractice insurance? Explain.

4. UNCOMPENSATED CARE, TORT CLAIM LIABILITY, AND
MALPRACTICE INSURANCE ISSUES

1. Is uncompensated care a problem? If so, why? if not, why?
2. Do you have information on differential between costs and reimbursement, and/or billing charges and reimbursement?
3. What is the payer mix? Has this changed for facilities since being designated?
4. What is the payer mix of trauma center vs. other surrounding hospitals?
5. Is there a statewide insurance fund or other fund to reimburse centers for uncompensated trauma care? How was it established? Method for reimbursement? Any legal authority for fund? How much is fund?
6. What State/local actions have been taken to control costs?
7. Do trauma centers receive patients irrespective of ability to pay? Is this a condition of designation?
8. Do they have any recommendations on how the uncompensated care issue can be resolved?
9. What are the current malpractice insurance rates in your area for the following physician categories:
 - Trauma Surgeon
 - Neurosurgeon
 - Orthopaedic Surgeon
 - Anesthesiologist
 - Emergency Physician?
10. What is the basis for the estimated rates for the physician groups listed in (9)? Individual? Statewide? Areawide? Most prevalent coverage?
11. Do the rates listed in (9) include a surcharge for a patient compensation fund? If so, what is the nature of this surcharge?
12. Have the rates in (9) changed over the past 3-5 years? To what degree and over what period?
13. What is the frequency of claims reported per 100 physicians in your area or State? Has this increased over the past 3-5 years? Describe.
14. What is the frequency of claims in your area (or State) per 100 occupied hospital beds? Has this changed over the past 3-5 years? What is the nature of this change?
15. What is the average paid claim against physicians in your area (or State)? Has this average paid claim changed over the past 3-5 years? Describe.

